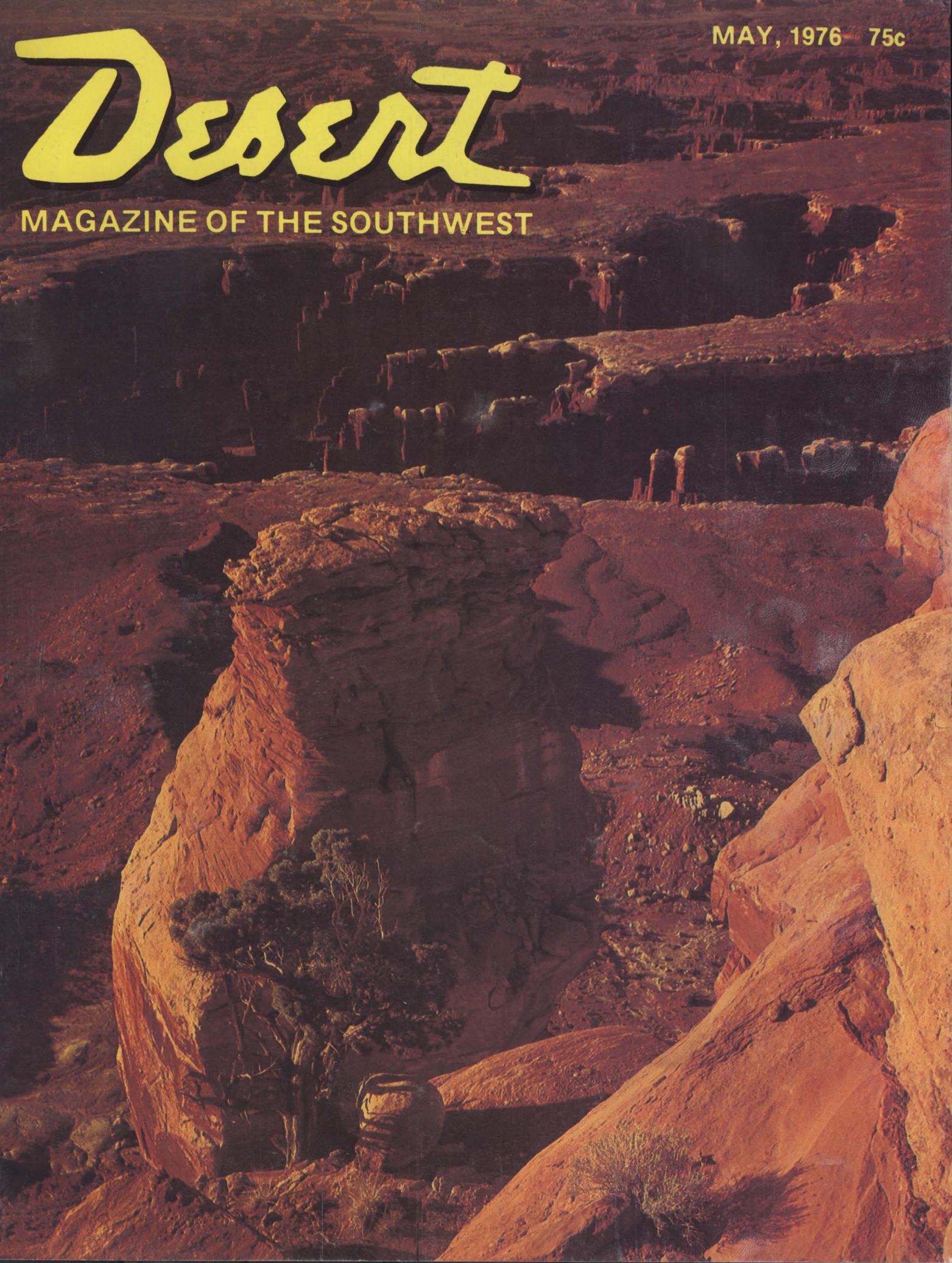


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Volume 39, Number 5

MAY 1976

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THE COVER:
Rim Country-Monument
Canyon below Grandview
Point in Canyonlands National
Park, Utah. Photo
by David Muench, Santa
Barbara, California.

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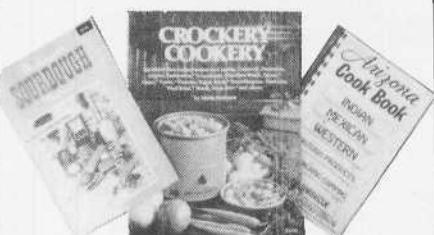


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THE CAVE PAINTINGS OF BAJA CALIFORNIA
The Great Murals of an Unknown People

By Harry Crosby

The Cave Paintings of Baja California is the first definitive book on the art of prehistoric people which has long been neglected by historians, archaeologists and artists.

It presents a tantalizing disclosure of a sweeping panorama of great murals executed by an unknown people in a land which has barely been penetrated by modern man.

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"In the sierras of central Baja California, hidden by a most forbidding terrain, thousands of brilliant paintings survive in caves and shelters. Here a prehistoric people created giant images, they laid down their brushes and disappeared, their art was lost to sight and their existence was reduced to the breath of a legend."

The book contains 40 pages of color reproductions of some of the finest of the cave paintings, two double-spread contemporary paintings reproducing original art work, and 70 sketches of figures which appear in various colors on cave walls in four different mountain ranges.

The photographic work was done by Crosby, a professional photographer and educator, who has spent much of his life in Mexico and speaks the language fluently. *The Cave Paintings of Baja California* is a sequel to his previous volume, *The King's Highway in Baja California*.

While the King's Highway traces the original mission road, or El Camino Real, the length of Baja California, *The Cave Paintings* reaches back beyond the natives who were there when the first European arrived. What happened to them is lost in antiquity, but this book is proof of their prolific existence, and the paintings they left behind are becoming a treasure of Mexico.

Hardcover, beautifully illustrated, 174 pages, \$18.50.

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By Ron and Peggy Miller



Mines of the Mojave covers the numerous mining districts running across the upper Mojave Desert from Tropico, west of the town of Mojave, to Mountain Pass, a little west of the Nevada border.

Except for those of Calico and Randsburg, most of these mines are little known, yet provide interesting jaunts for the visitor who does not wish to drive too far from the metropolitan centers. Many others may be reached by a short side trip from the Los Angeles-Las Vegas highway.

These include, in addition to the old gold and silver mines, the now very important "non-metallics" such as borax, talc, soda-ash and the TV-fluors of the Mountain Pass region.

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By James Klein



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Modern equipment enables the present day prospector to garner the wealth of gold left behind by the restless early miners who would leave a good claim and head for the new "diggins" whenever word spread of some new rich find. The early mining methods were also extremely wasteful. Knowledgeable mining men of the era estimated that only 20 to 30 percent of the gold was recovered from the ores in the first years of quartz mining.

The hydraulic miners were no better and they admitted that 60 percent of the gold was being lost at the time. Add to this the new gold that had been washed down anew into the streams and creeks and the spots that had to be missed, and you can see that your chances of finding gold are still good.

This book will guide you to the areas in which people are doing the best now. It will also give you the waybill to the many lost treasures of the Mother Lode.

Author Klein includes the history of the Gold Rush, geology of the Mother Lode, significant events in the history of gold in the Mother Lode, and then starts you in the southern tip of the Mother Lode region, Madera County, where gold was first discovered in 1850 at Texas Flat. From there, the author takes you through the famous Mother Lode country, describing the various camps and supplying information on each, in addition to illustrating each area with an excellent map.

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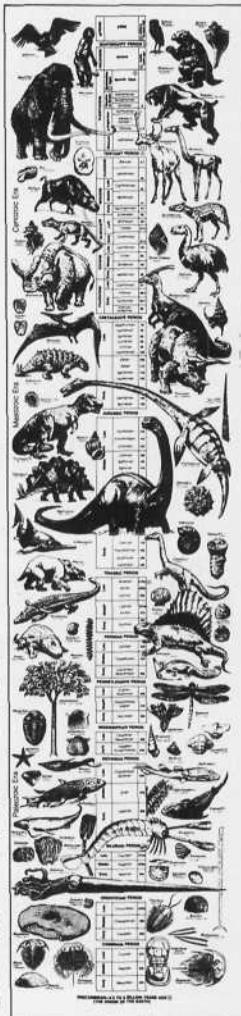
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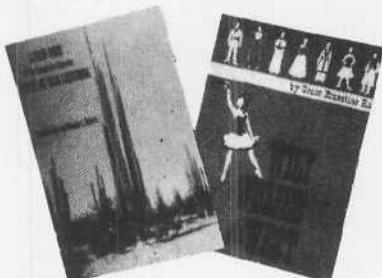
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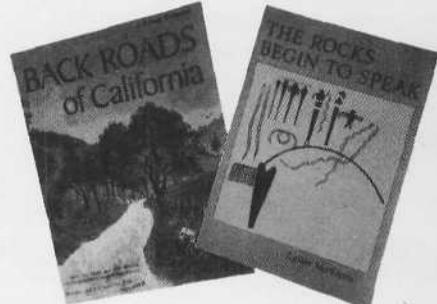
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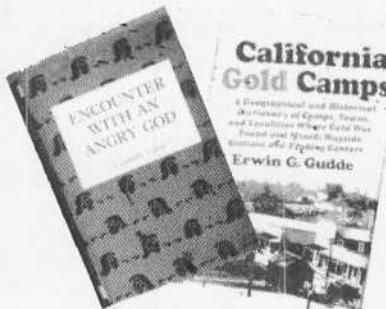
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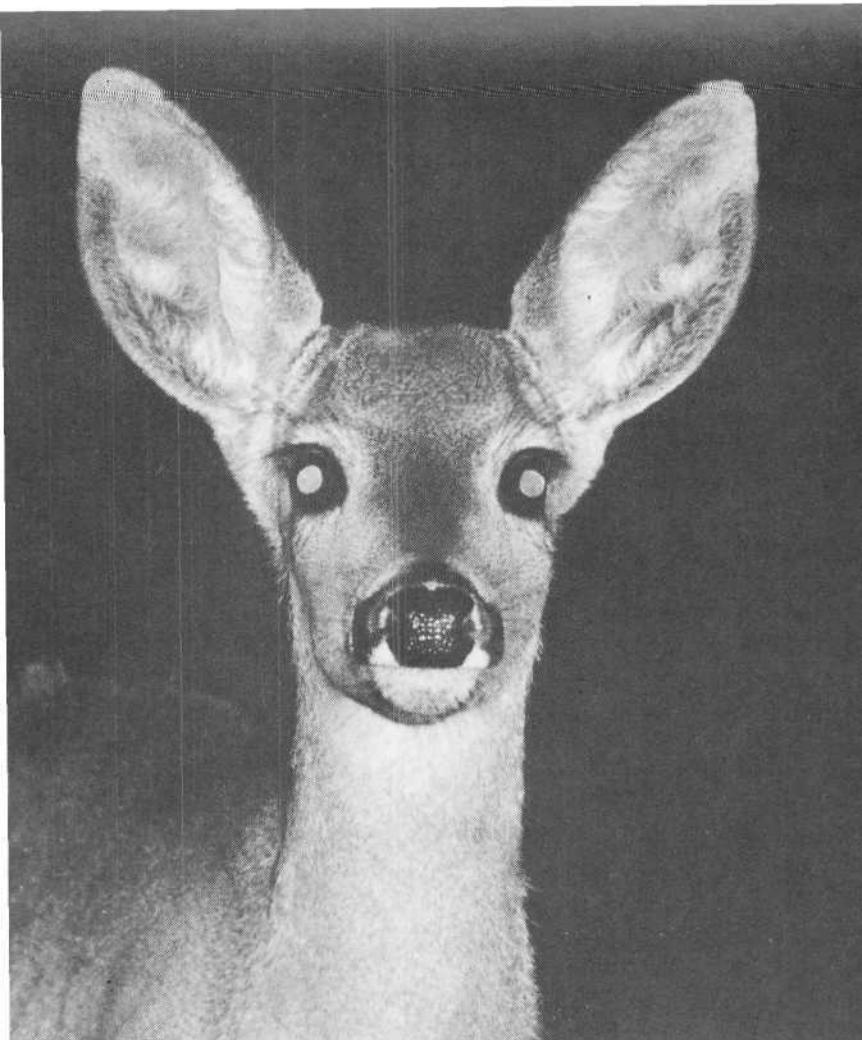
HAPPY WANDERER TRIPS by Slim Barnard. Well-known TV stars, Henrietta and Slim Barnard have put together a selection of their trips throughout the West from their Happy Wanderer travel shows. Books have excellent maps, history, cost of lodging, meals, etc. Perfect for families planning weekends. Both books are large format, heavy paperback, 150 pages each and \$2.95 each. Volume One covers California and Volume Two Arizona, Nevada and Mexico. WHEN ORDERING STATE WHICH VOLUME.



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INSIDE DEATH VALLEY by Chuck Gebhardt. A guide and reference text of forever mysterious Death Valley, containing over 80 photographs, many in color. Included, too, are Entry Guides and Place Name Index for the convenience of visitors. Written with authority by an avid hiker, backpacker and rockclimber. 160 pages, paperback, \$4.95.

LOST MINES OF THE GREAT SOUTHWEST by John D. Mitchell. The first of Mitchell's lost mine books is now available after having been out-of-print for years. Reproduced from the original copy and containing 54 articles based on accounts from people Mitchell interviewed. He spent his entire adult life investigating reports and legends of lost mines and treasures of the Southwest. Hardcover, illustrated, 175 pages, \$7.50.



Texas Whitetails

by K. L. BOYNTON

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Photos
by
George
Bradt.

THOMA in the Rio Grande Valley, northward into New Mexico, Nevada, Colorado, Oklahoma and southward into Mexico, the beautiful little Texas whitetail is one of the smaller members of the Virginia deer clan. Dressed in southwest style, He's paler in color than his eastern and northern cousins.

Like them, he prefers an open-glade-woods-edge location, but being such a highly adaptable fellow, can make a very good living in surprisingly arid environments. Alert and nervous, Tex is a dainty feeder, stepping lightly, nibbling smilax, prickly pear, cedar, mesquite, pausing frequently to sniff and listen, ever watchful. A past master of the Art of Instant Exit, he's off at the first inkling of danger, white tail hoisted, flashing a signal to others of his kind.

Certainly the fast-footed deer roaming the Southwest today have come a long way from their ancient ancestor who appeared on the scene some 40 million years ago. No bigger than a jackrabbit, this old cud-chewer had five toes. He also had sharp canine teeth, but no antlers. The fancy headgear was added some 10 million years later, and in time the canine teeth went their way.

Changes continued here and there in body size and form, until the deer trotting about the Pleistocene scenery a million years ago looked very much like today's whitetail.

The speed and agility that is the deer tribe's trademark came with modifications in the leg and five-toed foot. The deer today actually stands on just the tips of his fingers and toes — and only on the third and fourth at that, since the thumb and big toe have disappeared altogether and digits numbers two and five are so greatly reduced. Standing this way changes the foot posture and lengthens the leg, a prime requisite for speed.

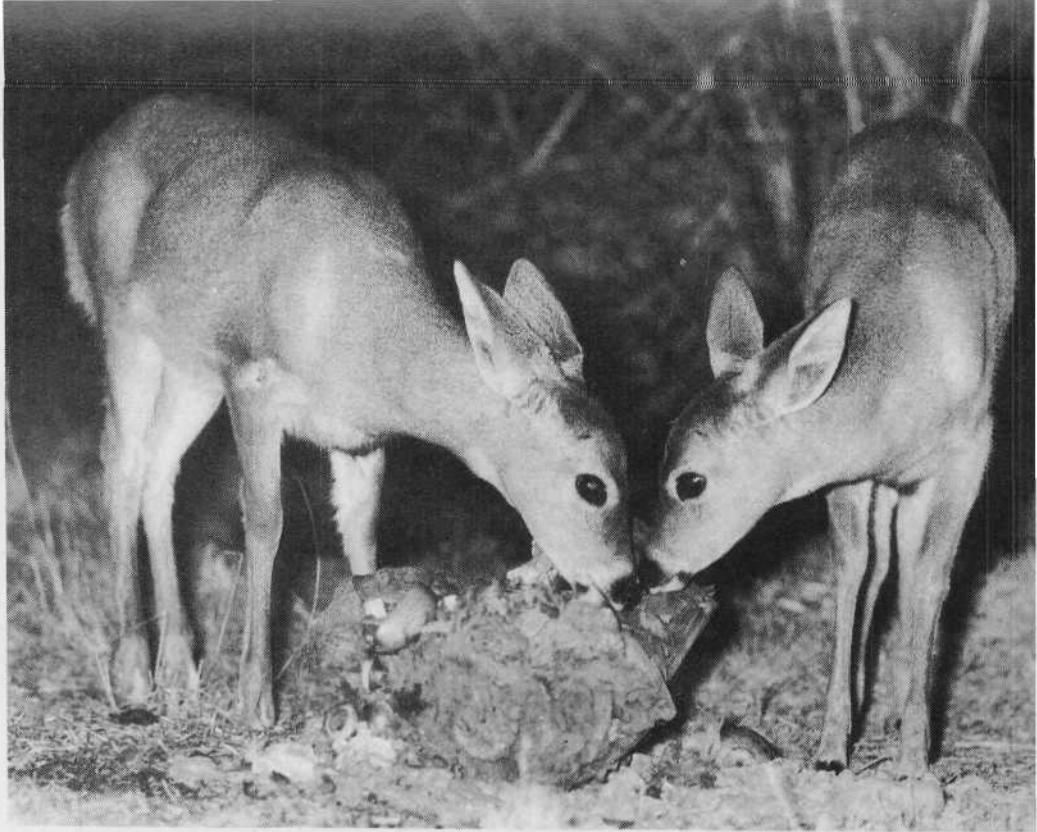
Speed is also built into the ankle with its forward and backward movement and its three-way tongue-and-groove joint that resists dislocation even under the shock of springing over rocky terrain. A whitetail's normal pace is a walk, trot or a run, the larger varieties hitting a speed of some 35 mph in a sprint, or 20-25 mph for longer distances. Great springing leaps covering 10-30 feet horizontally is a whitetail trick, as is high jumping; one captive neatly demonstrated this when faced with an 8½ foot fence. Tex, being



one of the smaller models and hence shorter in leg stride, may not clock such impressive figures.

Deer are herd animals. The behavior of the various members throughout the year is closely tied in with the state that papa's antlers happen to be in. Surprising as it may seem, this bony hardware ornamenting the heads of bucks is grown fresh each year, maturing just in time for the big fall rutting season. They drop off at the end of this annual hoe-down.

The team of J.W. Thomas, R.M. Robinson and R.G. Marburger, looking into the affairs of Texas deer during a major drouth in their study area, had a fine chance to observe a good-sized herd that came in force to eat the food they provided. It seems that here the social whirl is over by late January, the females being no longer in a receptive mood, so the herd, which had come together for breeding, breaks up into smaller units. The adult males, fast becoming antlerless themselves, form bachelor groups of two to five individuals. The females gather into larger groups made up of the



older does, yearling youngsters of both sexes and the current fawns. Also present in this particular Texas herd were a number of males who for some reason suffered from functional castration, and who failed to mature sexually. Near outcasts, they had their own groups which remained intact throughout the entire year. Usually more or less ignored by the others, their plight was worsened by the drouth conditions and food shortage. In the peck-order apparent at the feeding ground, they were at the very bottom, even below the more aggressive yearlings and fawns.

With the coming of spring in Texas, food becomes more plentiful and by March, the normal gents in the herd, stimulated by hormones and the lengthening daylight hours, begin the long haul of acquiring new antlers. The bony racks form on permanent stumps located on the frontal bones of the skull. As they grow out and upward they consist of soft and spongy bone richly supplied with blood vessels and covered with skin and hair. The buck is termed "in velvet" at this stage and is a very nervous fellow indeed, avoiding trouble assiduously. His head is exceedingly tender, and he is in no shape to do battle. The main thing for him during the spring and summer months is to take in as much nutritional food as possible for the job of producing antlers makes heavy physiological demands.

And what of the ladies meanwhile? They too are busy taking aboard as much nutritional food as possible, much of it, of course, going into the production of the coming fawns. Gestation takes about 200 days, the new herd additions attired in spotted coats putting in their appearance along in June and July.

Not much was known for a long time about the early days of deer youngsters beyond that the doe goes into seclusion at birth time hiding the fawns (the blessed event usually involves twins) in separate locations, and rejoining her old group with her new offsprings only after several weeks. Then biologists R.M. Jackson, M. White and F.F. Knowlton, dismayed by the 25-50 percent mortality among some Texas fawns, with the males being particularly hard hit, set about finding out what really goes on during the first crucial weeks of life. They captured a number of fawns, fitted them with radio transmitter collars, the pulse rate to indicate the degree of fawn activity.

Only weighing some $3\frac{1}{2}$ pounds at birth, brand new Texas whitetails are smaller than their eastern and northern counterparts and their first few days the more chancey. Unless the doe has had good food, the fawns will be weak, and she may not have sufficient milk. Adverse weather conditions are very rough on the little fellows. Rest in bed for the

Continued on Page 40

Above:
Two
fawns
caught
feeding.

Left:
Their
light
coloring
blends
into the
background.

by HOWARD NEAL

Genoa, Nevada

LOCATION: Genoa is located on Nevada State Highway 57 four miles west of U.S. Highway 395 and eight miles northwest of Minden.

BRIEF HISTORY: In the Spring of 1850 a small group of Mormons left their homes in Salt Lake City to try their luck in the California gold fields. Some were traveling west to mine, others to trade. One of those who took goods to sell was a 24-year-old named H.S. Beatie. He never quite made it to California.

While traveling through the lush Carson Valley he found the spot for his trading post. He, and eight others in his party, stopped at a camp site in the shadow of the towering Sierra Nevada Mountains and built a crude log cabin and corral. The cabin was Nevada's first building. Beatie, and his companions, called the place Mormon Station.

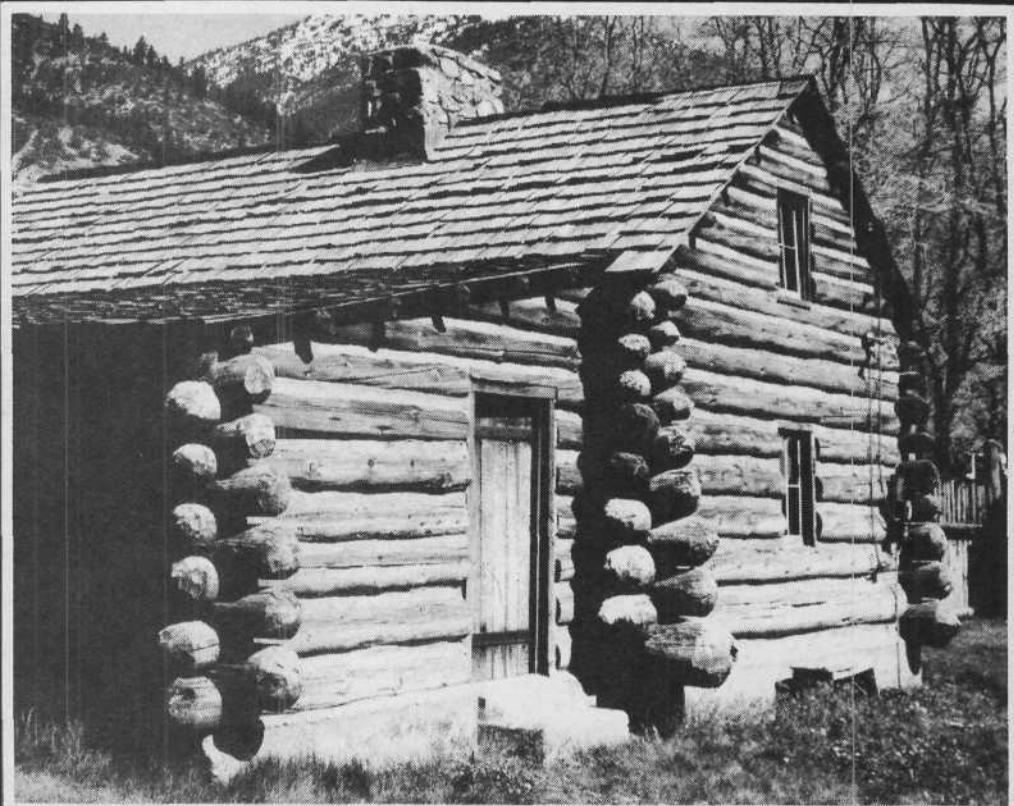
Mormon Station was located on one of the main emigrant trails to California's Mother Lode, and in the summer of 1850 the traffic through the Carson Valley was dense. Business at the trading

post was so good that Beatie, twice, had to cross the Sierras in order to replenish his supplies. With the arrival of fall, though, the opportunity to trade declined and the threat of heavy winter blizzards was enough to cause the Mormons to close down and return to Salt Lake City.

The following year a man named John Reese established a permanent store at Mormon Station. Small farms were established in the Carson Valley and Reese and the others set up a rather loose local government that brought a semblance of civilization to what was then known as western Utah. By 1854, though, the Territory of Utah exercised its authority and replaced the local government. Carson County was created with Mormon Station as the county seat.

By the spring of 1856, Mormon Station had become a real town with a saw mill, a blacksmith shop, and that true sign of progress, a post office. A man named Orson Hyde laid out a townsite and the place was renamed Genoa.

It is little known that Virginia City's famous newspaper, the *Territorial Enterprise*, was started at



A reconstruction of Mormon Station's original log cabin and stockade is now used as a museum. Inside the cabin are displays of pioneer tools, guns, and old photographs. Within the stockade is a small picnic area.

The Masonic Lodge is one of many older buildings on Genoa's main street. Others include a bar labeled "Nevada's Oldest Drinking Establishment" and an imposing brick structure which was once used as the Douglas County Courthouse. Photographs by Howard Neal.



Genoa in 1858, a year before the discovery of the fabulous Comstock Lode high on the slopes of Mount Davidson some 30 miles north of Genoa. The newspaper was published first in Genoa, then in Carson City, before making its final move to the center of the Comstock activity.

During the exciting years while a fortune in silver was being taken from the mountain to the north, Genoa grew and prospered. The population is said to have reached nearly 1,000. Those years passed, though, and Genoa's population declined.

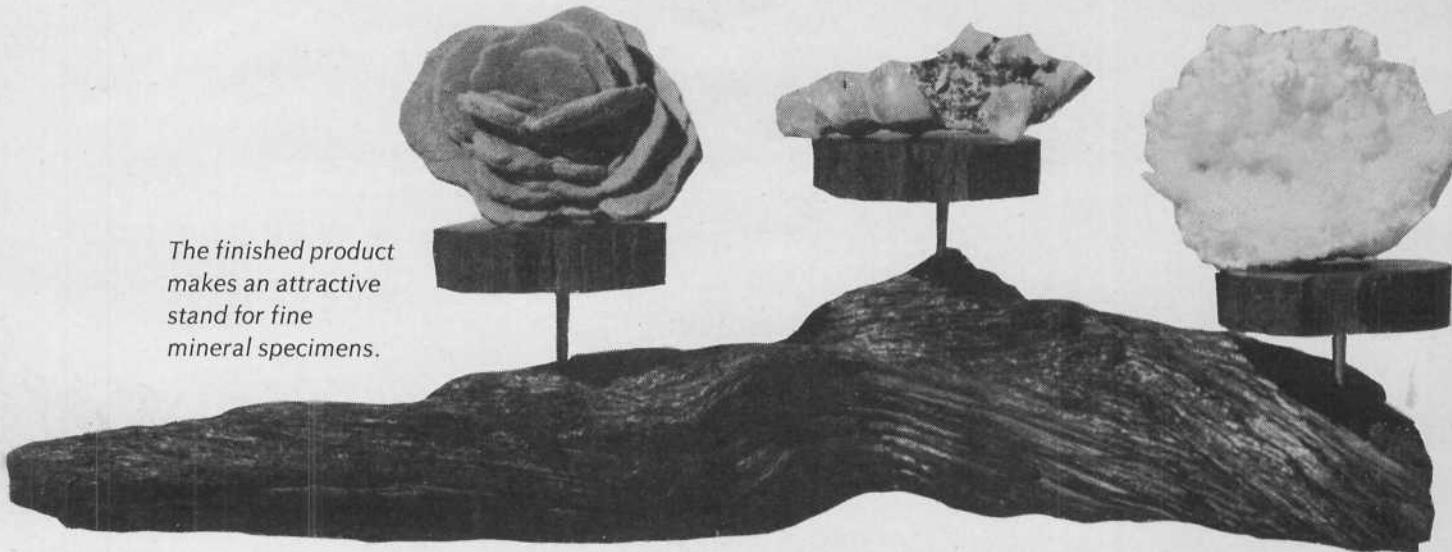
Genoa was once a thriving center of commerce and government. Those days are gone, but the community still retains that certain something that made H.S. Beatie stop there in the first place and start what was to become Nevada's first town. That

certain something is the remarkable beauty of the verdant Carson Valley mingling with the pines and spectacular eastern face of the Sierra Nevada Mountains.

GENOA TODAY: In addition to the beauty of its setting, Genoa still has much of interest to the western history enthusiast. Many of the old buildings are still in use. The old courthouse remains, and so does a restoration of the Mormon stockade and log cabin which is now a museum. First, visit the museum. Then, walk the quiet streets of Nevada's first settlement. Listen to the birds, view the beauty, take a deep breath and fill your lungs with history. It is guaranteed that any image of Nevada being only dry sand and sagebrush will quickly disappear! □

An Artisan

The finished product makes an attractive stand for fine mineral specimens.



THE ROCK COLLECTOR'S ingenuity has been sorely tested in his search for new and attractive ways to display handmade jewelry and outstanding mineral specimens. Bob Fuqua, of Wikieup, Arizona, has solved this prob-

lem by combining nature's discards with her precious gems and minerals.

Using carefully selected sections of dead ironwood root and applying plenty of elbow grease, he produces mounts which are not only extremely attractive

but complement the jewelry or specimens being displayed.

"It is really rather simple. Anyone can do it," Bob told us. Though his hobby has now become a family business, he was willing to share his methods with *Desert's* readers.

Father of six, Bob's teenage sons, Barry, Larry and Terry assist him in all but the final finishing of the mounts. "Wood gathering" is the most important part of the project as not just any old wood will do. It must be roots from ironwood trees which have been dead for five years or more!

Bob and his boys make regular trips into the backcountry in search of specimens with interesting shapes. This is not an easy task and often several days are required to harvest the crops. Bob notes any trees which have recently died and keeps them in mind for later use.

While an effort is made to collect similar sizes, the rough material is "shaped" by breaking off any unwanted sections. The amount of trimming depends upon the projected use for the specimens.

The next step gives the roots a "driftwood" finish. Bob has built a clever but simple device for tumbling his material — a 50-gallon drum, rigged to tumble slowly. Nothing is added. The specimens

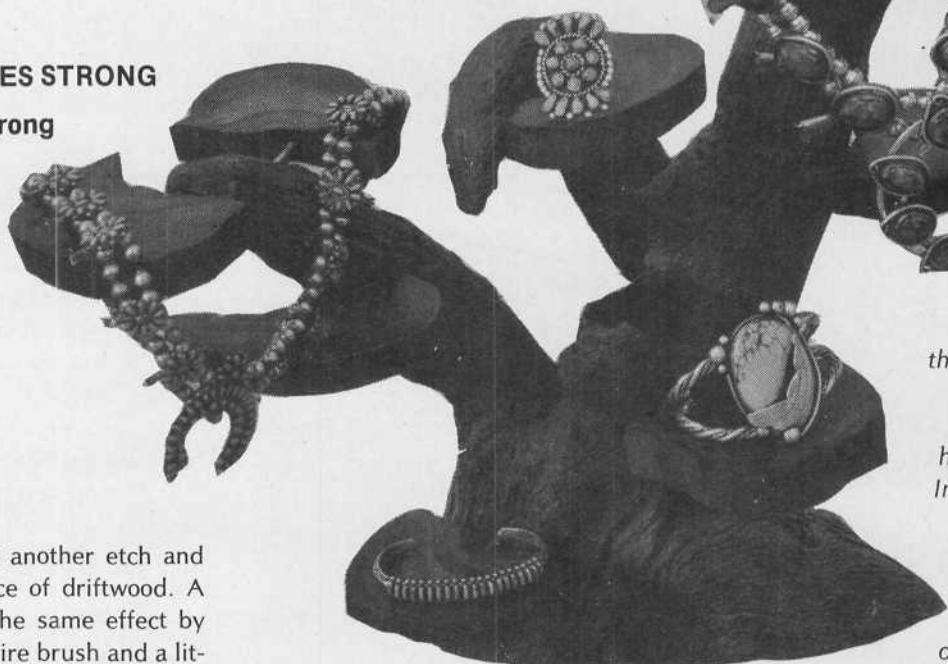


Terry Fuqua holds a rough piece of ironwood root which will be finished into a beautiful display pedestal for minerals. The assorted roots behind him will be turned into jewelry stands, bracelet bars and candelabras.

of Ironwood

by MARY FRANCES STRONG

photos by Jerry Strong



tumbling against one another etch and smooth to a semblance of driftwood. A hobbyist can obtain the same effect by the diligent use of a wire brush and a little water. Keep at it until you are satisfied with the texture.

The root sections are now washed, dried and the final finish applied. Any "dye and shine" shoe polish (natural or brown color) can be used. Rub it into the wood using an applicator or toothbrush. Let dry, then carefully hand-polish with a shoe brush or soft cloth. This process can be repeated to deepen the color desired. The base for your stand is now completed.

The next step is to make holders (minerals or jewelry) or bars for bracelets. Bob cuts slabs from limb or root sections approximately one-half inch thick and two to three inches in diameter. The bark edge is carefully wire brushed and one

side is sanded. Shoe polish and buffing provide the final finish. This method brings out the rings. Matched slabs are used on each stand and the effect is beautiful.

A small hole is drilled into the underside of each slab and into the base. Then a short section of brazing rod is inserted into the stand and glued in place to hold the slab above the base. Arrangement and number of slabs used can be varied.

For a bracelet bar, a long limb section is cut to the desired length, then finished and mounted to a base as previously described. This is a very effective way to display several bracelets.

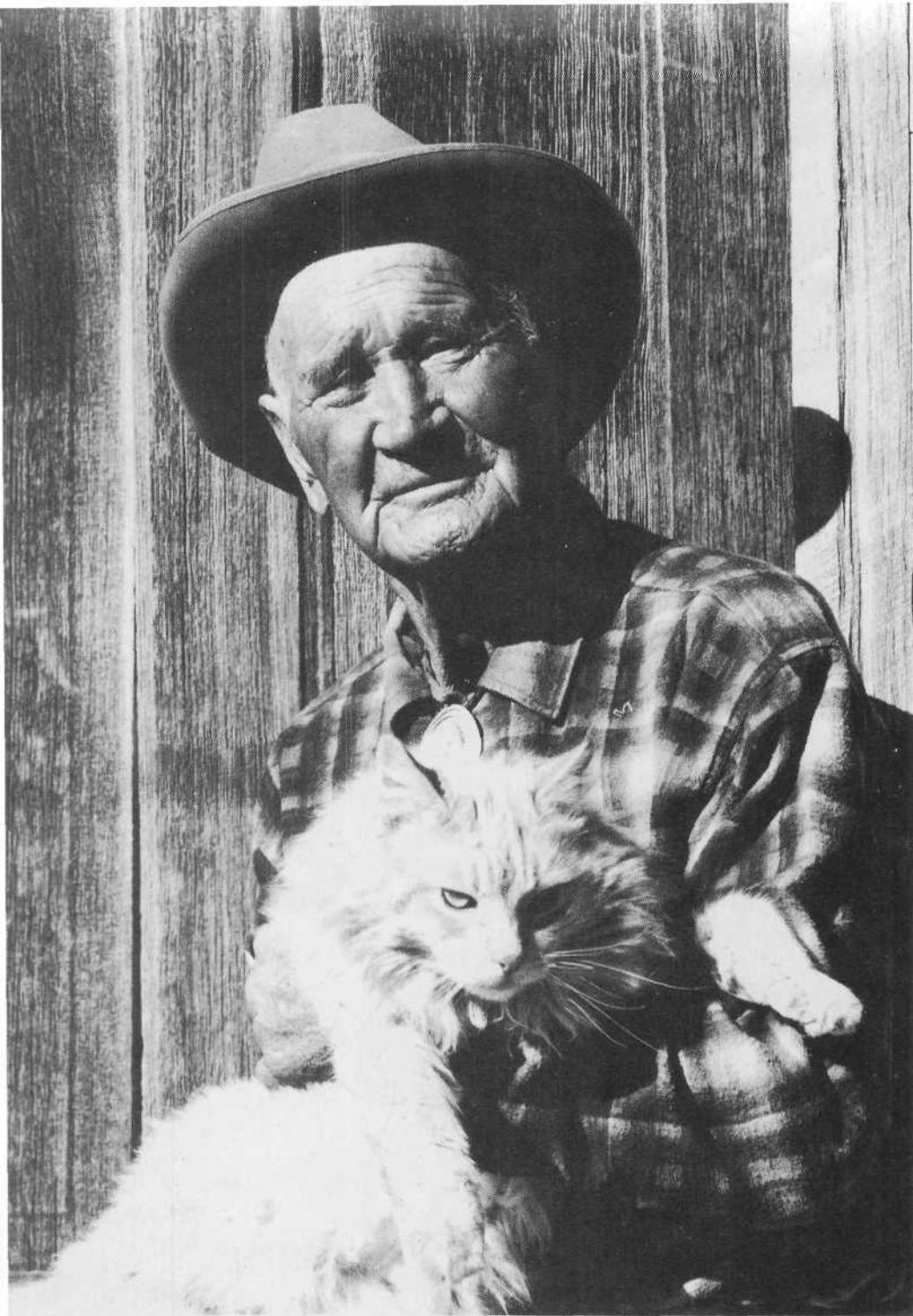
The roots of Desert Ironwood (*Olneya*

Bob selects the shape of his stand so it will show off the beauty of handcrafted jewelry. Indian jewelry shown is from the collection of Georgia and Ed Stephens of Wikieup, Arizona.

tesota) are particularly suited to this use. However, any unusual roots from other hardwood trees can be handled in the same manner—provided they are quite dry.

For anyone unable to obtain ironwood or who prefers to buy them ready-made, Bob has a good selection from which to choose. Further information can be obtained by writing to him at Box 935, Wikieup, Arizona 83560.

We enjoyed meeting Bob and his family. We particularly admire those who can turn nature's discards into attractive and useful articles. A man of the desert, a miner and guide, Bob is also a skillful "Ironwood Artisan." □



Pioneer prospector-rancher Bill Keys was King of the Desert Queen Ranch. National Park Service photo by Fred Mang, Jr.

THE TYPICAL prospector came to the California desert to chip away at barren mountains and discover a fortune. A few did. Most did not, and the marks of their passing have almost blended into the land.

William F. Keys was as different from those itinerant prospectors as his Desert Queen Ranch was from their makeshift shanties. Keys lived on the Mojave Desert for 60 years in what is now Joshua Tree National Monument. The site he chose to homestead was a rock-bound alcove at Hidden Valley and formerly a camp for cattle rustlers. It is located at the northwest end of the Monument, 15 miles from the town of Joshua Tree.

Hidden Valley is a popular area today, with a campground, large Joshua trees and jumbled rock formations. A recent attraction for visitors is a tour of Keys' Desert Queen Ranch. Park rangers interpret the colorful history of this man who died in 1969 and left a wealth of artifacts, mining and farming equipment, and buildings from a bygone era of desert history. Tours are offered on weekends during the spring and fall seasons, February through May and October through December.

Bill Keys arrived in this region in 1910 and filed claim to a gold mine called the Desert Queen. He gave his homestead the same name and settled there after 15 years of nomadic life. He made use of a stamp mill and adobe barn that had been

Desert Queen Ranch

by CARY P. CARLSON

*The old ranch house
as it appears today.*

built in 1894 by the rustlers and hauled a shack to the site from an abandoned mine for the beginning of his ranch house.

In 1918 he married a Los Angeles woman, Frances Lawton, and brought her out over bumpy dirt roads to the Desert Queen Ranch. Here they raised five children, adding rooms to the house as their family grew. They planted a garden of vegetables and fruit trees; they owned chickens, rabbits, goats, bees and 75 head of cattle. Keys claimed grazing land in the open valleys and supplemented the then plentiful grass with alfalfa grown in the orchard.

The Keys' family included two sons and three daughters, with one of the boys dying at an early age. The children's elementary school education took place at home. Willis, the surviving son, was 13 before he received formal schooling. The other children had the benefit of a county provided teacher. So the Desert Queen Ranch was lively with the antics of additional youngsters brought there from neighboring homesteads to attend school. Keys provided the teacher's living quarters as well as the one-room school house which still contains a half dozen little wooden desks.

One of his greatest accomplishments in becoming a desert resident was the dam Keys constructed to provide year-round water. Concrete was hauled in for the job and this well-engineered dam backed up enough water to stock fish and go swimming. Silt dredged from the bottom of the lake enriched the garden soil, and a pipeline fed irrigation water to the crops. He also dug two wells, one of which supplied an elevated storage tank.

The primary love of Bill Keys was gold mining and he owned several mines scattered over the high desert. Although no mines are at the ranch, three different types of milling equipment can be seen. One is the primitive arrastra, a stone and concrete circular trough around which mules walked dragging eight stone blocks which crushed the ore thrown into



the trough. A ton of ore could be processed in a day and Keys claimed he could get \$105 worth of gold. He would have to kneel down in the trough and pick it out of the cracks and crevices with a spoon.

The most common method of milling ore in the desert was the stamp mill. A one-stamp mill shows how this form of processing works. The stamp is really a piston which moves up and down, crushing the ore as fine as flour. The stamp was operated by a six-horsepower gasoline engine. The ore was washed out

of the bin with water onto a collecting plate where mercury was sprinkled. It combined with the gold into an amalgam which was heavier than the ore and stayed on the plate while water carried the tailings away. The amalgam was gathered up with a rubber scraper, and heated in an oven called a retort. Heat caused the mercury to vaporize, leaving the gold behind.

Another type of mill at the ranch is commonly called a Chilean mill and was powered by an old automobile engine.

Continued on Page 39



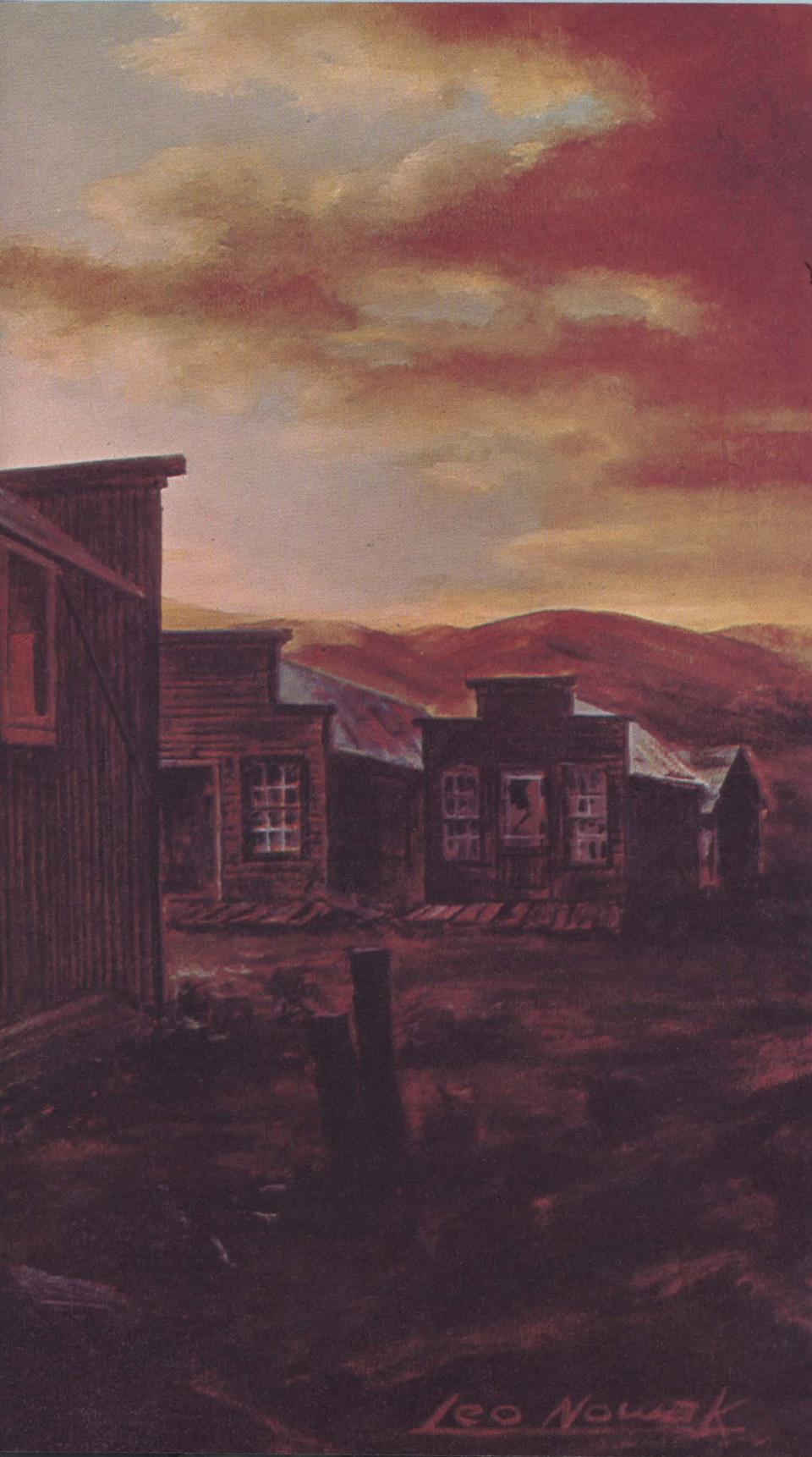
*Park Ranger shows the single stamp mill to a tour group.
Note arrastra in the background.
Photos courtesy
Joshua Tree National Monument.*

WESTERN ART

Leo Nowak He



dreamed of gold, but wound up in “oil”!



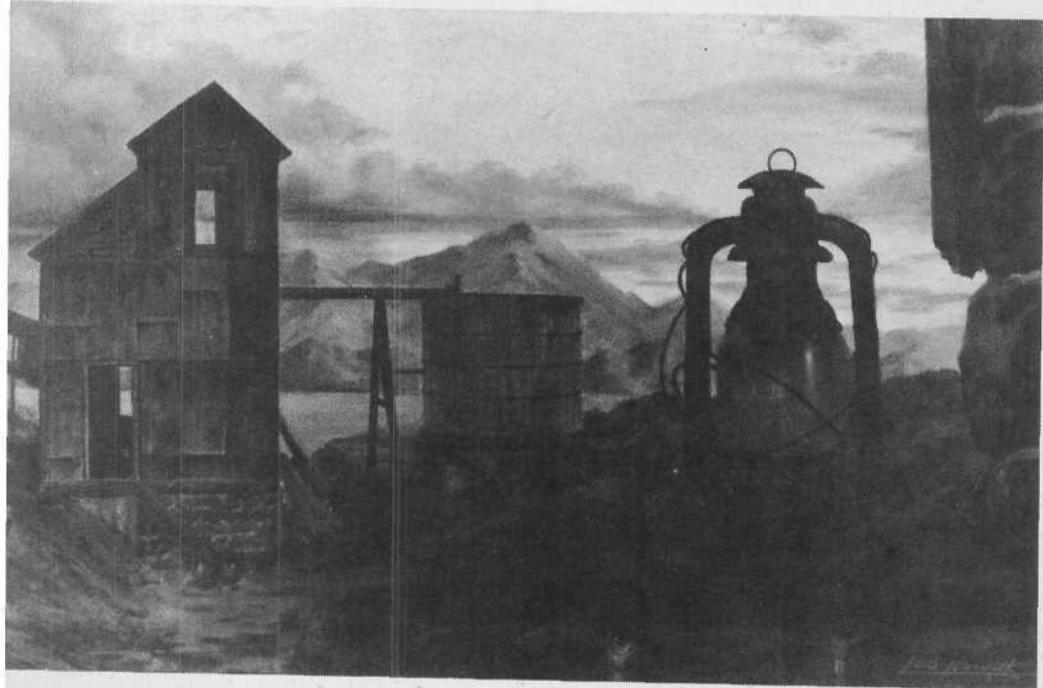
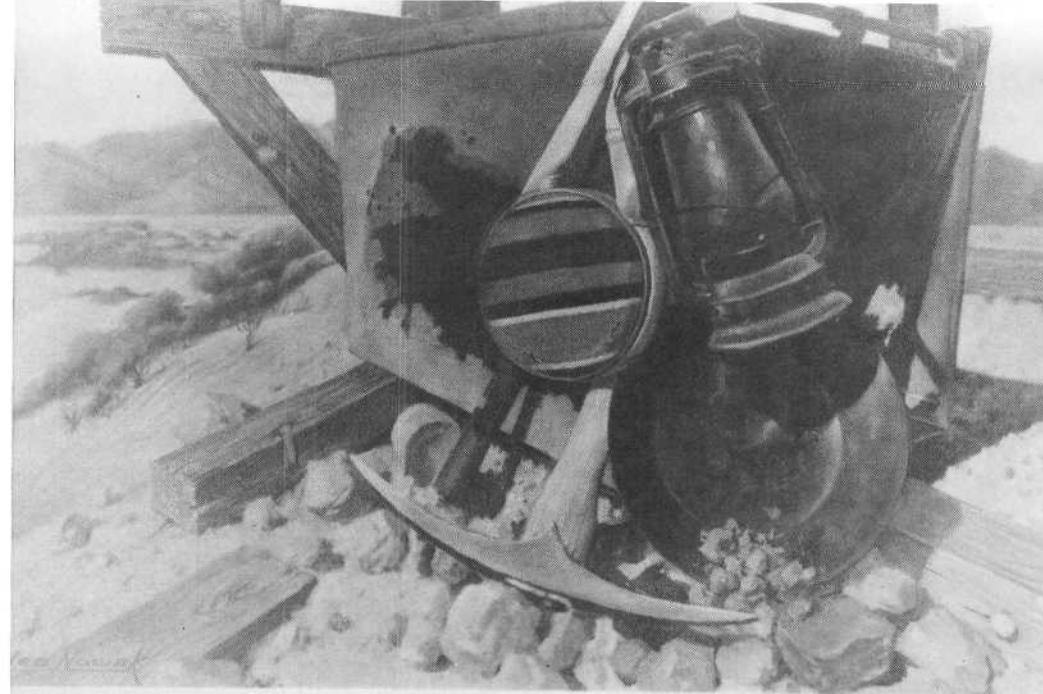
TO ANYONE acquainted with the character and abilities of Leo Nowak, it was inevitable that his lifelong love for the West would one day be transcribed onto canvas.

Born in Elizabeth, New Jersey and brought up in Cleveland, Ohio, his dominant boyhood dream was to go West and search for gold. It is fortunate that he never lost sight of that dream, because much of his success in art has come as a result of it.

Nowak's accomplishments are all the more remarkable because he had very little training in art. During his boyhood, there was neither time nor money for art school, although he did manage to attend some night and Saturday morning classes for about two years. Outside of that, his long list of awards and the variety of his achievements attest to the success of his eyes and common sense as the chief source of his education in art.

Leo won his first award at the age of 11. He has worked in commercial art since 1928, and among other things was an illustrator for the Superman comic strip from 1940 to 1942, when he enlisted in the Navy. He became battalion staff artist while overseas in the Pacific theater and upon returning home moved to Los Angeles and has remained in Cali-

*“Ghost Town
after the Rain”
Oil 24” x 36”*



fornia ever since. He became the chief illustrator for the Stamps-Conhaim Newspaper Advertising Service, a position he held for over 25 years.

Nowak has managed to produce an incredible number of paintings, many of which were award winners. He works primarily in oil, although he has also done some impressive water colors. Earlier subjects were mainly landscapes and figures, both nudes and ballet dancers. It was his nudes, singly and in groups, that first won him many of his more than 60 awards. He has also painted still lifes, seascapes and many portraits.

He is an honorary life member of the California Art Club and also belongs to the Valley Artists' Guild in Los Angeles and the Desert Art League in Ridgecrest, California, where he now lives.

Nowak is listed in *Who's Who in American Art*, *Who's Who in Western Art* and *Who's Who in the West*, and has participated in traveling shows around the country as well as in Australia and New Zealand.

Throughout his nearly 30 years in the West, Leo has roamed the deserts, visit-

Top: "Mining Memories"
Oil, 24" x 36"

Center: "Twilight of the Bonanza"
Oil, 24" x 36"

Bottom: "Scout of the Pioneers"
Oil, 24" x 36"



*"Escape to
the Badlands"*
Oil, 36" x 48"

Leo Nowak,
preserving
the West
on canvas.



*"Bound for the
Promised Land"*
Oil, 24" x 48"



to be exact replicas of them. Often combining elements from several locales in order to create a more pleasing composition, Leo feels that the primary importance of this type of art lies not so much in the authenticity of the scene as in its beauty and in what it represents of the struggles, hardships, faith, courage and ingenuity that comprise the story of the West; and on a larger scale, the story of America.

Nowak is something of an island in a complex world. He believes in all the basic virtues and has a straightforward nature that rejects complicated solutions to simple problems. His elemental life style has rewarded him with excellent health, a youthful appearance and

boundless energy that defy his age. His love for the West stems naturally from his love for his country and all the freedoms for which it stands.

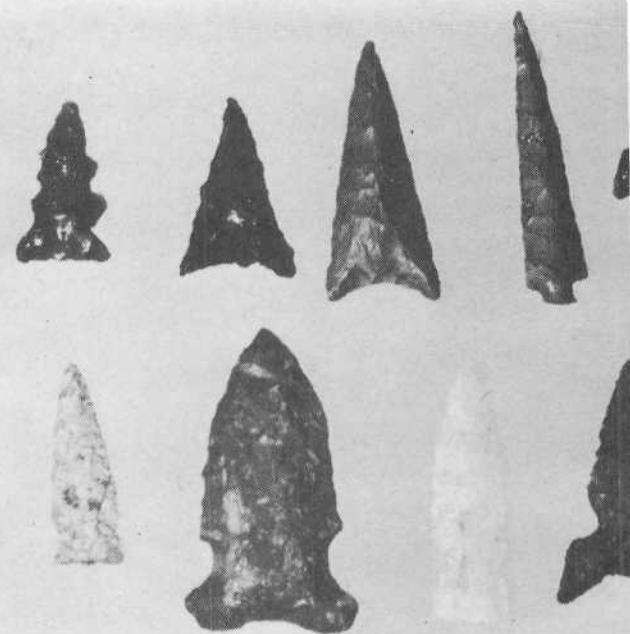
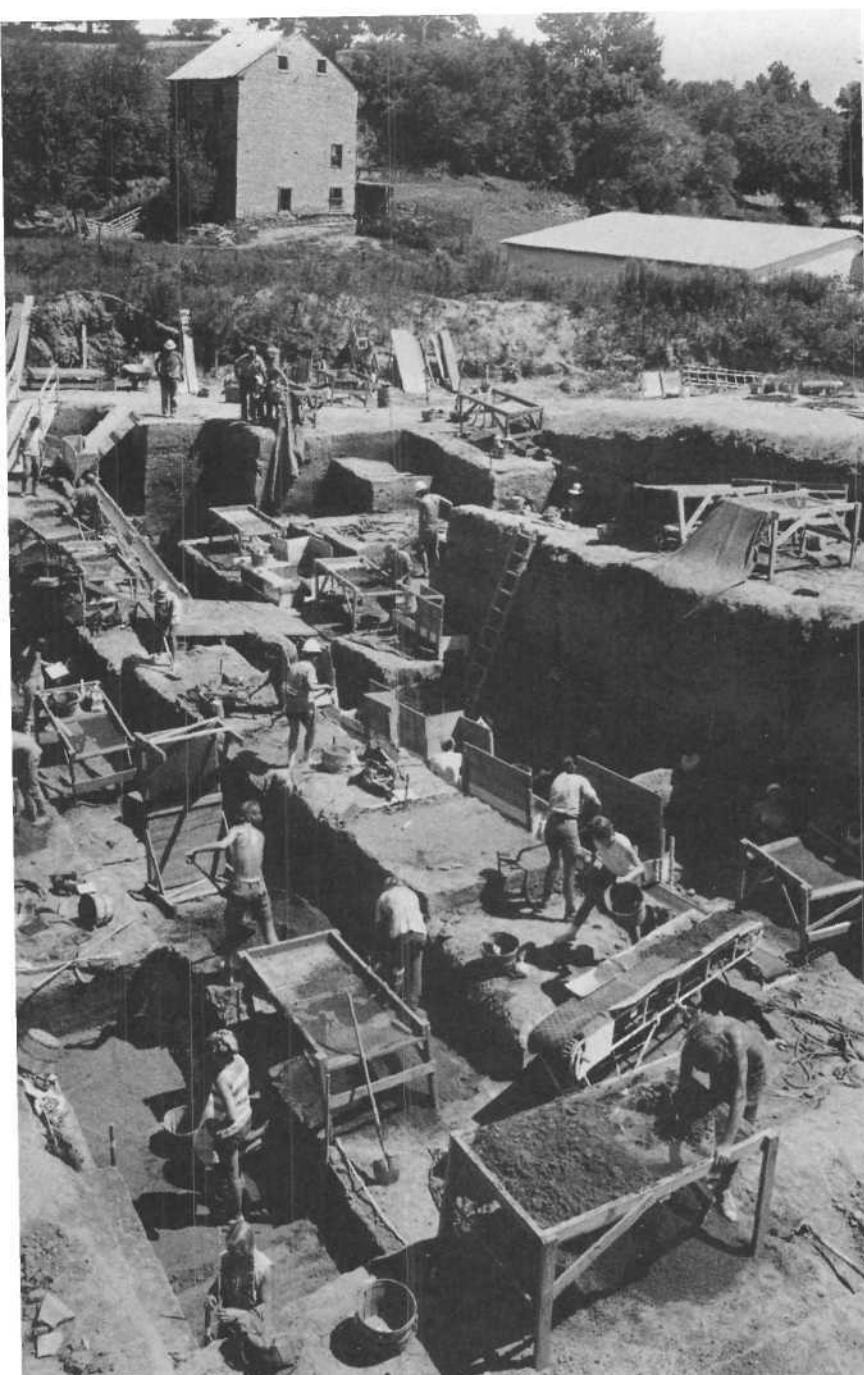
Today, although technically retired, he remains as active as ever; painting, prospecting and drawing editorial cartoons for the Ridgecrest *Daily Independent*. He is frequently asked to give demonstrations and has so far refused numerous requests to teach art because he wants to spend his time painting and traveling.

Because of the opal mine, he moved to the desert. Because of his love of the West, he has stayed there, and helped us to relive its colorful history through his legacy of canvas nuggets. □

ed ghost towns, explored mine shafts, toured the Mother Lode country and learned everything he could from experience and the printed pages. He is an avid reader of Western fact and fiction. He never found more than traces of the gold he dreamed about, but got sidetracked into a couple of uranium ventures that nearly succeeded; and then he learned about and eventually became the owner of what is believed to be the only gem-quality fire opal mine in California. Before selling out, Leo had spent 18 years there, during which time the place had become so popular with rockhounds from all over that it was featured in several national magazines. Upon his retirement from commercial artwork, he moved to Ridgecrest in order to be near the mine.

It was approximately 10 years ago that Leo began painting scenes of the West which he had always loved, including landscapes, horses, pioneers, Indians, "bad guys," ghost towns and abandoned mines. In addition, he has produced a rare category of art: the combination Western still life and landscape, consisting of mining equipment and other Western objects against an appropriate background which includes a dramatic sky that he considers a vital part of any outdoor scene. In fact, whether daylight or sunset, some his Western paintings could be called "skyscrapers," because of their spectacular cloud formations.

His western scenes are usually based on actual locations, but are not intended



Excavation at the Koster site, Kampsburg, Illinois. Here, archeologists operate a three-month Field School each summer under the combined sponsorship of Northwestern University and the Foundation for Illinois Archaeology.

The Interpretation of a Site

While the study of artifacts in itself might be an interesting pastime, the objective of the archeologist is the discovery of cultural processes and the reconstruction of prehistoric sequences. Once the site has been excavated, the next step is the analysis of the artifacts and all data obtained from the site. This laboratory analysis is designed basically to answer the questions about missing or unclear information for a particular time and place and, thus, the materials removed from the site are examined.

The first step is the sorting of artifacts so that each type can be correlated to the site map with reference to all the features that were excavated. This is performed by each level so that a picture of artifact distribution can be maintained for a particular time period of habitation. By analyzing the distribution of artifacts, statistical inferences can be made as to what activity the former occupants were performing in a given area of the site—activities such as cooking and food processing, tool manufacture, or pottery

What is American Archeology?

PART II

by WM. JACK HRANICKY



Small projectile points from Southern California. They are probably late in California's pre-history and represent semi-nomadic desert people just prior to European contact.

manufacture. It should be noted here that pottery in the prehistoric United States is relatively recent, dating around 2000 B.C. and in some areas as late as 500 A.D.

In counting artifacts, changes in the artifact counts are the basis for objectively derived statistical inferences that arise from these changes. For example, if the projectile point count decreases in number and potsherds (broken pottery) increase in number by levels, one might conclude that the former culture was depending more on horticulture than on a hunting subsistence pattern.

Another source of techniques used in the archeological laboratory comes from the other sciences such as physics, chemistry, geology or biology. With the help of these sciences, like zoology, the archeologist can identify bone remains such as deer, fox, rabbit or bison. Also, he may be able to find out where a particular type of flint that was used to make stone tools on the site comes from. However, one of the major tools comes from physics and this is the dating techniques, the most important of which is the radiocarbon (C-14) dating technique.

The carbon-14 technique can only be used on the organic remains from a site, such as bone or wood. It is based on the principle that the earth's atmosphere contains a radioactive isotope of carbon. Since carbon is the element on which all life forms depend, every living thing contains radioactive carbon-14 (very small amounts, rest assuredly) and the regular carbon-12. Carbon-14 enters the tissues of plants through photosynthesis

and the tissues of animals and men as they consume the plant tissue or the tissues of each other. The radiocarbon enters the bodies of living organisms and, throughout life, is maintained at a constant level. When the plant or animal dies, it no longer is taking in carbon, and the carbon-14 in the tissues begins to decay. The length of time for the radiocarbon to completely disappear is quite lengthy—nearly 60,000 years; and, by measuring the amount of radioactivity remaining since the plant's or animal's death, a date can be obtained for the time of death.

Once all the materials from a site have been analyzed, two things now take place. They are: 1. a publication about the site and 2. storage of the materials from a site. Both of these are essential to archeology for it is through the publications that we can find information about the site; and it is through the storage of site materials that the evidence about the site is maintained. Additionally, new techniques in site analysis are constantly being developed and, if we did not keep the materials from the sites, reappraisals might not be possible to add more information about the site.

Storage is becoming a problem of tremendous magnitude as museum space is at a premium and museum staffs are frequently inadequate. Thus, keeping records about museum collections is often lacking. However, the use of the computer has lessened this burden and has made it possible to locate particular collections or artifacts which the archeologist may want to examine in order to help him or her analyze a site.

The Publications of Archeology

This section might best be called "Public Archeology," since, without the support of the American public, there would be no archeology. Archeology is not a money producing entity and, therefore, depends upon public support and participation. Archeology is not restricted to those who have Ph.D.s in anthropology. While this is the realm of professional archeology, most professionals gladly accept help from the public in the form of amateur archeologists. The amateur archeologists have helped the pro-

fession tremendously. Not only have they donated their labor for the actual excavation of sites, but they often have other skills—photography, engineering, legal, just to name a few.

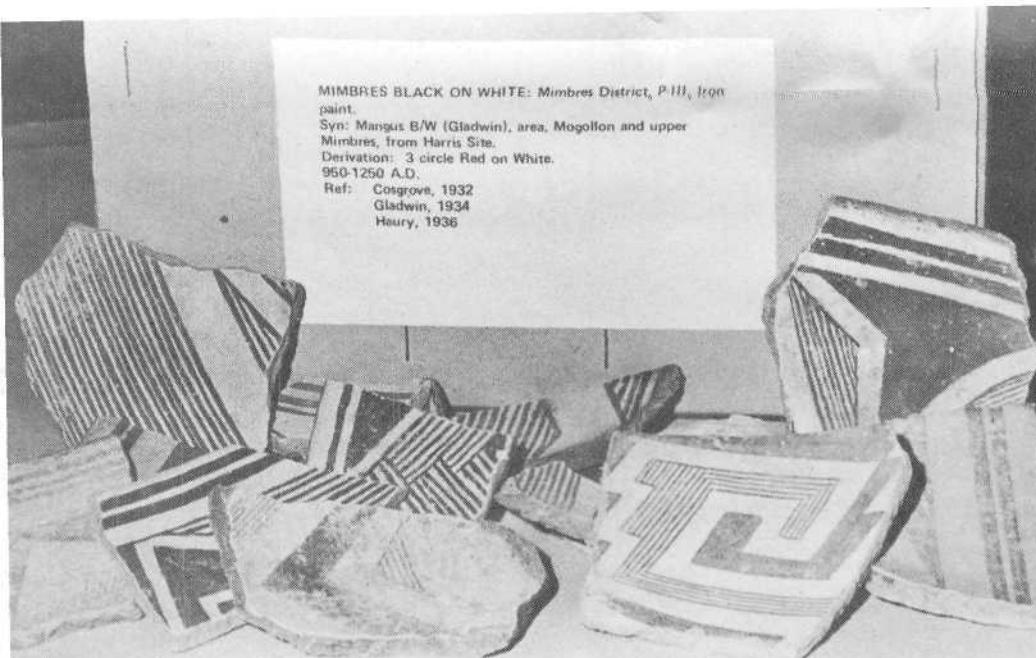
The majority of the amateur and professional archeologists in this country are organized into local, state, regional and national archeological societies. A great number of these organizations contain a large proportion of amateurs and, because of their numbers (probably 60,000), the majority of the important discoveries are made by amateur archeologists. On the other hand, the majority of the area investigations, excavations, cultural determinations and relationships have been made by the professional archeologists, but usually not without some assistance or participation of amateurs. This close association of amateur and professional archeologists has led to a rapid development of the science of archeology, and their future associations should be even more fruitful. One must remember that in the early days of American archeology there were only amateurs.

Nearly all the states have state archeological societies and, within each, there are usually a few independent or dependent local societies. The total number of archeological societies is probably around 350. Most of these societies, especially the state societies, publish quarterly journals; and these publications are the major source of the articles

Clovis fluted projectile point. This point is usually considered as being synonymous with the Paleo-Indian Tradition [10,000 B.C.].



MIMBRES BLACK ON WHITE: Mimbres District, P-III, Iron paint.
 Syn: Mangu B/W (Gladwin), area, Mogollon and upper
 Mimbres, from Harris Site.
 Derivation: 3 circle Red on White.
 980-1250 A.D.
 Ref: Congrove, 1932
 Gladwin, 1934
 Haury, 1936



Pottery from the Southwest. These sherds are known as Mimbres black on white and date 950-1250 A.D.

concerning American archeology. Through these publications, members can learn about archeology in general, read about specific sites and tremendously support a major function in field archeology—the site publication. These societies hold monthly meetings where guest speakers talk about their work, and many of the societies teach new, inexperienced members how to dig; and this is usually accomplished by working on sites which the society is digging.

The archeological society brings together all persons interested in learning, studying and preserving knowledge about prehistoric peoples. The society serves to foster, teach and encourage a constructive approach to the archeology of the state which it serves. It accomplishes these objectives by its active membership of amateur as well as professional archeologists, and both, collectively, save and preserve America's antiquities.

Publications about archeological sites

are the foundation for American archeology and constitute a realm known as "Public Knowledge." Collectively, all the site reports are the bases for further analysis since few sites offer a complete picture about prehistory. When analyzing all the sites, the discipline of archeology, through discussion and criticism of site reports and their interpretations, offers public knowledge which represents the truth about the events and sequences in prehistory. Additionally, archeology is not static, that is, new publications are communications for the expansion of traditional knowledge and the evolution of new data.

Archeological knowledge, through its facts and theories or explanations, must survive a period of critical study and testing by all archeologists and must have been found to be acceptable to them. Archeology is a scientific enterprise and corporate entity. Each archeologist ventures into new discoveries based upon the discoveries of his predecessors and colleagues. It is never one archeologist that goes through all the steps from survey to publication, but an entire profession consisting of many individuals, both professional and amateur, continuously making contributions.

The amount of information about the prehistory of the United States would take volumes to explain and could not, of course, be attempted here in a few pages. Many of the archeological excavations have become classics in studying American archeology; but I should point out that, while certain specific sites tend

to be more spectacular than others, our knowledge about our Native Americans comes from the collective efforts of thousands of "diggers," both professional and amateur.

We know that the first Indians migrated into the Americas around 50,000 years ago and, through the years, developed highly complex civilizations. We have divided this 50,000 years into chronological divisions as well as geographic regions. The first period is known as the Early Man Period; the second, starting around 10,000 B.C., is known as the Paleo-Indian Period. This period is also known as the Big Game Tradition, for the people during this period relied rather heavily on the hunting of large game animals, such as the horse, camel, elephant and mammoth. As these animals became extinct, these people had to adapt to new environments and, thus, their cultures changed in order to survive.

The succeeding archeological periods—known as the Archaic in the East and Desert in the West—saw the beginnings of the more formative cultures that the Europeans encountered when exploring and colonizing the New World. These Periods date about 8000 to 7000 B.C. and are generally considered to have ended when the influences of horticulture and ceramics came into the continental United States from Mexico about 2000 B.C. This last date varies from region to region, and the time periods are used for convenience by the archeologists. After 2000 B.C., we have a tremendous amount of information which enables us to start referring to culture areas, such as the American Southwest, the Southwest, the Plains and so forth.

In each of these periods, there are particular characteristics of the people who lived during these times; and their artifacts that they lost, discarded, misplaced, dropped, etc., tell us a great deal about these early people. For example, projectile points, stone knives and scrapers have been found on sites that contain large game animals and, thus, the inference to the Big Game Tradition. The projectile points have an essentially unique method of manufacture known as the fluting technique. This technique, which has been found all over America, was to work a flute or channel out of the center of the point. This channel started at the base of the point and extended usually

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about halfway towards the point. The flute was removed on both sides and the style, the Clovis point, has become synonymous with the Paleo-Indian Period.

The next period saw a pattern of life that was essentially a continuation of their nomadic ancestors. The people hunted and gathered in small bands, and they left little for the archeologist to find. But once they obtained the idea of horticulture, they became more permanent in habitation and more productive in food processing. This dependence on raising food rather than constantly looking for it soon enabled more freedom from nature. It did not take all the members of the group to search for food either by hunting animals or by gathering fruits, nuts or wild plants; and a high degree of specialization seems to start occurring as well as sizable increases in population. They began to have members of the group who served as full-time priests and chiefs, members who acted as merchants to trade with neighboring cultures and, in some cases, with cultures who lived hundreds of miles away. They began experimenting in the use of metallurgy, writing and astronomical observations.

Many of these later items developed in Mexico, but it did not take long for the ideas to reach into other parts of the northern hemisphere. Probably two of the regional cultures that have received a little more attention are the Pueblo cultures of the Southwest and the Hopewell cultures of the Midwestern United States. The Pueblo developed irrigation systems for their crops, performed works of art in decorating their pottery and are possibly best known for their city building, such as Pueblo Bonito of New Mexico. The Hopewell are probably best known for their dirt mound constructions, such as the Serpent Mound in Ohio. The Hopewell cultures are only part of many cultures during the later stages in the Midwest and most archeologists refer to the entire period as the Mississippian.

You have probably noticed that I have not offered a definition of archeology. It is simply the study of people who lived in the past. The archeologist has often been called the historian of anthropology. We excavate in order to present, via the physical evidence such as artifacts, ancient structures or mounds of dirt, the history of people who have since dis-



peared—but of people who left their unwritten stories about their lives. These histories may or may not be important to you living today since this is, of course, a matter of personal preference. Moreover, an Indian projectile point, a lawman's old pistol, a soldier's bayonet, a lady's hairpin, etc., represent different things to different people.

The preservation of these artifacts is part of your history, and no single item will be more important than another. There are those who would tear down old buildings because they are old and cannot be used in the modern society; but to keep a few "old things" for the future, I think most would agree. After all, Hancock's signature on the letter to King George is only on an old piece of paper—why not recycle it to make a new piece of paper. Of course not.

History is made up of the lives of thousands of people making up our heritage, and we keep a few of their personal effects around to remind us from whence we came and, hopefully, to guide us by their experiences into tomorrow. American archeology—it is the study of your people—and we have placed records of their lives into the American history book and made these records a public display. I can show you all the evidences from 50,000 years ago to our nuclear age which tell thousands of individual stories, but, collectively, they tell histories. □

Navajo workers in a 2700-year-old campsite in Arizona.

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The Walking Rocks

A TRIP ALONG THE
WHITE RIM TRAIL
IN CANYONLANDS NATIONAL PARK

by F. A. BARNES

I WAS FIRST introduced to the "Walking Rocks" by Moab tour guide Lin Ottinger in 1966, before that section of the spectacular White Rim Trail was annexed into Canyonlands National Park.

My wife and I had just "discovered" the canyonlands of southeastern Utah and had parked our travel trailer in Moab, expecting to spend three or four days getting a quick look at newly-established Canyonlands National Park. Well, after our trip with Lin to the "Walking Rocks" and "Walking Bridge," plus a dozen other fantastic places near Moab, we were hooked.

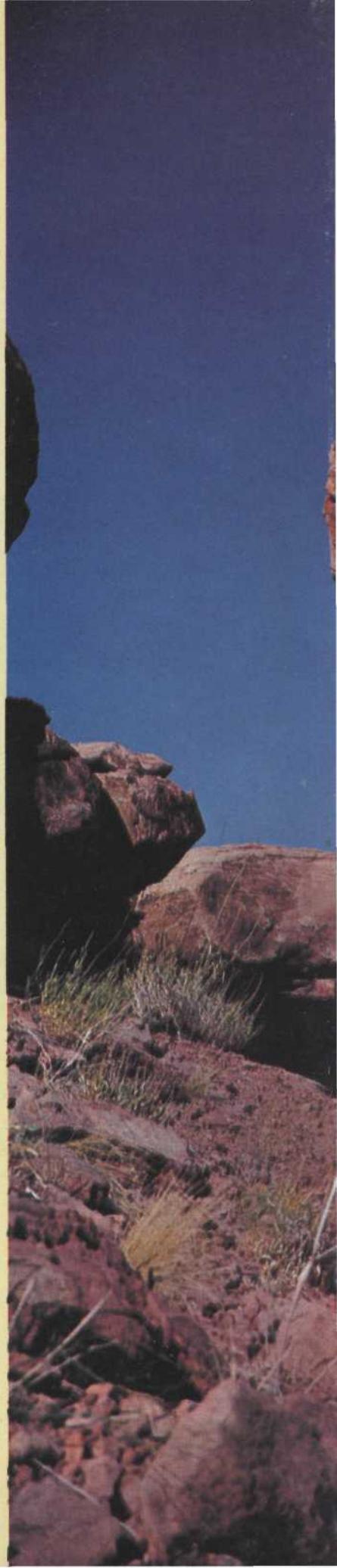
Six weeks later we reluctantly hitched up our trailer and headed on to other commitments, but not without vowing to return to southeastern Utah for longer still the next year, on the southward leg of our year-round travel route through the western states, Canada and Mexico.

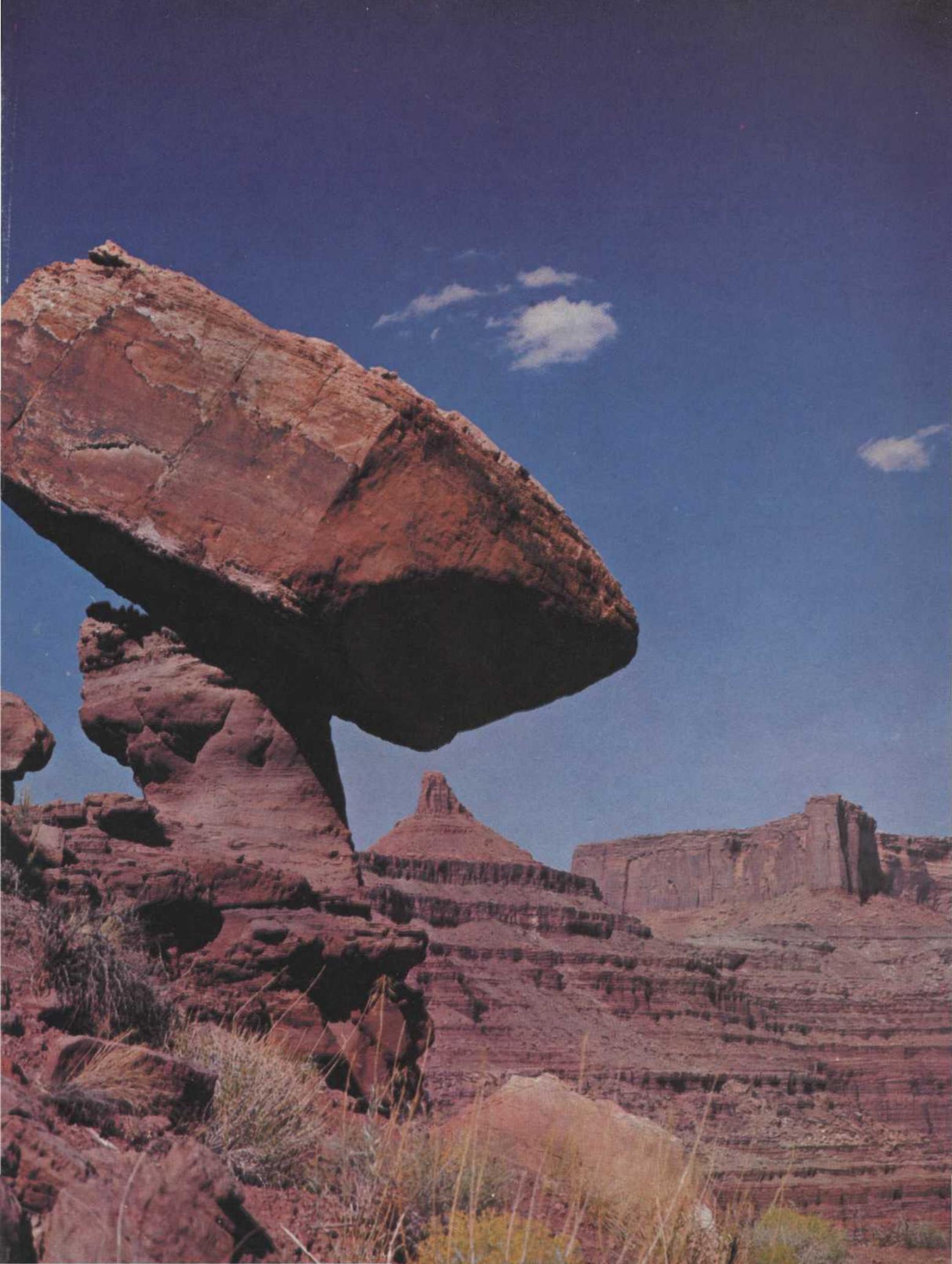
After two more such visits to Utah's canyonlands in 1967 and 1968 we were

convinced, and settled in Moab permanently. I have always credited a large part of this decision to that first trip to the "Walking Rocks."

When Lin first proposed that we go with him on a scheduled tour to the "Walking Rocks," my first question was, "What are the 'Walking Rocks'?" Lin, never one to spoil a pleasant surprise, just shrugged and replied, "Rocks you can walk on." Intrigued and a bit baffled, we decided to go see these "rocks you can walk on" and the nearby "Walking Bridge," which we assumed was "a bridge you can walk on," whatever that might be.

We thus found out that Lin's name for his most popular one-day tour out of Moab, "The Walking Rocks Tour," deserves some kind of prize for understatement, because it is undoubtedly one of the most thrilling, fascinating, colorful, beautiful, spectacular, breathtaking and varied tours on the many possible out of Moab.





Since 1966, I have gone many times to Lin's Walking Rocks, usually in my own dune buggy or four-wheel-drive vehicle. But last fall, following a nostalgic urge, I went once again with Lin Ottinger on one of his regular tours. The group was large enough to require two of the special Volkswagen transporters that Lin uses for his tours.

I rode in the bus Lin drove, together with a West Coast couple and Mrs. Lucille Pratt and her mother, Mrs. Helen Hermanson, both of Rockford, Illinois, altogether a most congenial group of travel companions. Lucille was an avid photographer and in love with canyonlands country, so we had much to talk about along the way. Helene, a lively lady in her seventies, was interested in everything, full of humor and added greatly to the happy mood of the trip.

Our day's tour began in Moab. We headed north up Moab Valley on scenic U.S. 163, passed uranium millionaire Charlie Steen's home perched on a ledge above town, crossed the Colorado River on one of the three bridges in Utah that span this famous river, then drove by the Atlas Minerals uranium refining plant where the rare ore is concentrated into "yellowcake," a mixture of uranium oxides. Just beyond this mill, with its huge gray piles of unprocessed uranium ore, we turned onto Utah 279, a national award-winning scenic highway built

within the spectacular Colorado River gorge.

As we traveled this road on the narrow strip of bottomland that lies between the silt-laden, green-bordered river and the sheer, soaring cliffs that confine it, we made frequent stops to see such highlights as arches, dinosaur tracks, Indian ruins, huge panels of petroglyphs and both ends of a railroad tunnel that pierces over a mile of solid rock.

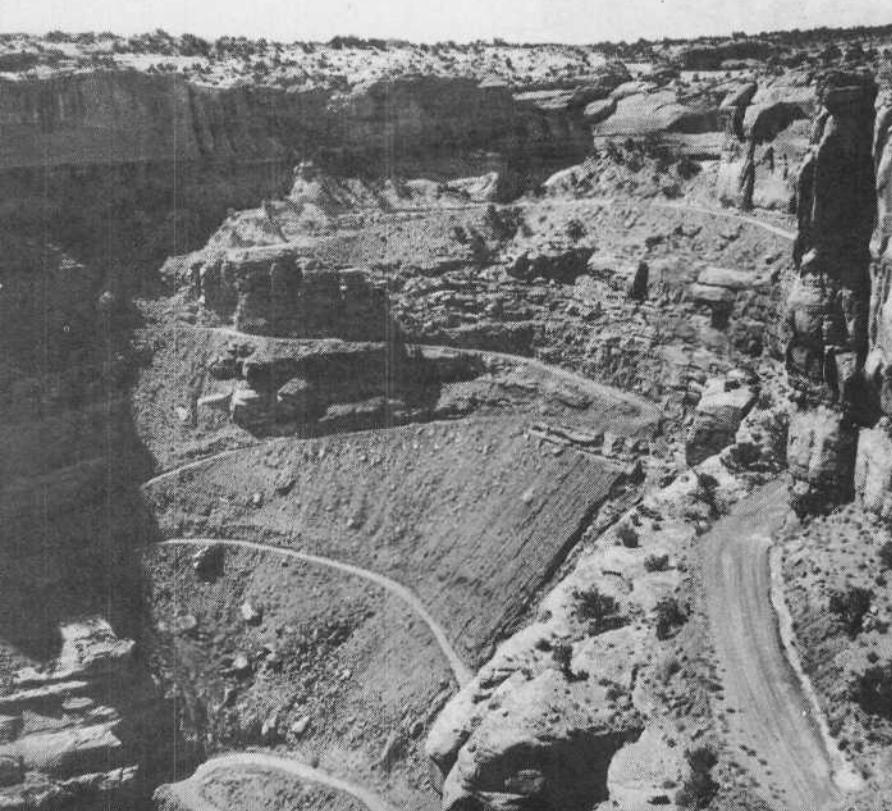
At the end of the paved road we saw the reason for both the railroad spur and the road, a huge potash refining plant, a group of huge pea-green buildings set within a gigantic amphitheater of dark red, eroded sandstone.

Beyond this big plant, we continued on a rough dirt road. This road paralleled the river for a mile or so, then climbed abruptly onto higher benchland as the river gorge narrowed. The red-sand desert that dominated for the next several miles was covered with immense, sprawling solar evaporation ponds set on descending terraces between towering cliffs and the edge of the river gorge. Here, mineral-laden water pumped from deep potash mines is concentrated by evaporation in plastic-lined ponds before further refinement. Over 1,300 feet above these thousands of acres of geometric lakes the towering butte of Dead Horse Point loomed against the western sky.

Beyond the potash ponds the colorful desert was once again natural, a broad red-hued vista of dune sand and weirdly eroded sandstone shapes, studded with desert shrubs, shallow dry washes and patches of bright green from seeping springs. Steep rubble slopes topped by sheer sandstone walls bounded the sand flats to the west, and also to the east beyond similar flats on the other side of the deep river gorge glimpsed now and then. At one point, Lin took an obscure side trail to a picturesque hidden natural span which he had named "Sally's Arch" after the tour passenger who first spotted it several years ago.

Soon, the main trail ascended through a chaotic jumble of colorful canyons up onto a higher terrace floored with the sea-bottom limestone that is part of the Rico Formation. Here, the trail traveled within a few yards of the river gorge rim, directly below looming Dead Horse Point. We made one stop to permit the rockhounds on the trip to search for specimens of the sea shell fossils that are abundant in the Rico Formation, then stopped again at a rim point overlooking a gigantic loop in the Colorado River gorge, the same loop that can be viewed from Dead Horse Point (see *Desert*, October 1974).

Not far beyond this breathtaking overlook, our trail climbed again through a maze of minor canyons. We paused



briefly in one of these to look at some petroglyphs and an arrow cut into a wash-bottom rock. Allegedly, this "road sign" was put there by the famous outlaw, Butch Cassidy, as a guide to his Wild Bunch when they were fleeing pursuing posses. At that time, the indicated canyon was the only way up onto the White Rim, an escape route often used by Cassidy and other outlaws.

Just beyond this historic canyon, our trail ascended steeply through a veritable labyrinth of gigantic, white boulders lying on dark red sedimentary slopes, and still other massive white rocks balanced precariously atop incredible towers of softer rock.

The trail finally topped out on the White Rim. This is the easternmost stretch of this spectacular white sandstone layer that is exposed at intermediate levels below the lofty Island in the Sky mesa, yet still far above the deep gorges of the Colorado and Green Rivers. The White Rim occurs only within Canyonlands National Park and is a unique uppermost member of the dark red Cutler Formation.

The White Rim Trail is a Jeep trail that follows the White Rim for about 75 miles, before ultimately connecting with

paved roads in the Colorado River gorge at one end, and on the high mesaland to the north of Island in the Sky at the other end. We were to see the first several miles of this long trail on Lin Ottenger's "Walking Rocks Tour."

After reaching the White Rim, we soon came to a trail junction where the infamous Shafer Trail, an appalling series of switchbacks that descend from the Island in the Sky, joins the White Rim Trail. Beyond this junction the trail entered a stretch of spectacular scenery that almost defies description. Brilliantly colorful sandstone cliffs towered above the trail, while fantastically eroded canyons dropped steeply to the Colorado River. Thousands of balanced rocks, spires and weird stone shapes clung to the canyon walls, and picturesque juniper trees added their touches of dark green to the brighter greens of riverbank willow and tamarisk far below.

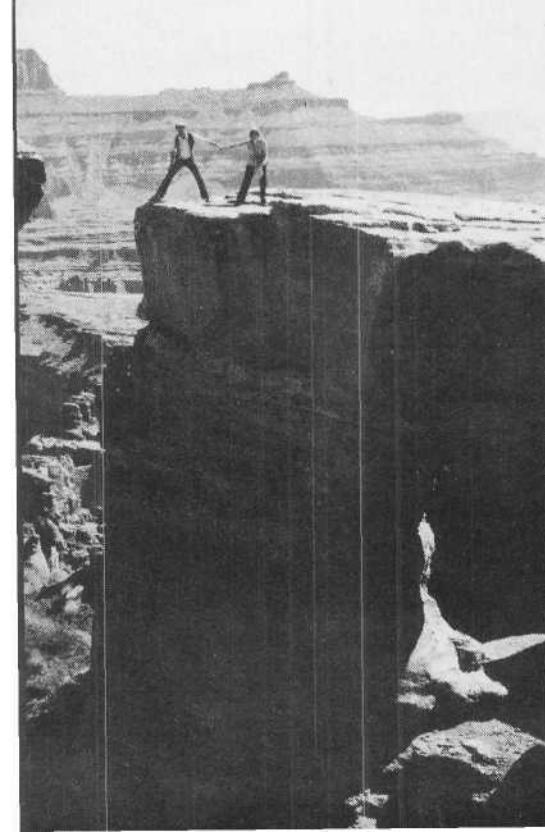
Soon Lin turned onto a short spur trail that led onto the White Rim, itself. There, overlooking the river 900 feet below, he parked and told us to follow him. And there we found out about the "Walking Rocks" as we hiked out onto a slender, jutting peninsula of White Rim sandstone.

At first, the massive stone was monolithic, all in one piece. Then it was cracked, with the cracks still closed or filled with sand and tenacious desert vegetation. As we continued walking the cracks between the huge slabs of rock were separated, at first just a little, then finally enough to require jumping from slab to slab. Only the more athletic in our group went this far.

The gaps between the slabs offered tantalizing glimpses of cavernous hollows below the 10-foot-thick White Rim sandstone, caverns that we later visited. From these echoing grottoes beneath the White Rim, the distant vistas were given picturesque frames. There was Dead Horse Point in the distance. Below the narrow part of the river gooseneck that is seen from Dead Horse Point along our trail, a huge white balanced rock stood out in stark relief on the red rock of the narrow neck where the river loops almost touched. To the north and west, the jutting ramparts of Island in the Sky were framed by still other windows in the caverns beneath the Walking Rocks, and from that worm's-eye view we could see that each of the gigantic Walking Rocks stood on its own narrow column of

Continued on Page 38

Right: The arrow being indicated by Lin Ottenger was allegedly put there by the famous outlaw, Butch Cassidy, to point the way to the only route passable at that time. Older Indian petroglyphs also appear on the wash-bottom boulder.



Far left: One of the greatest thrills of Lin's Walking Rocks tour is a drive up the breathtaking switchbacks of the infamous Shafer Trail. This trail, once a deer trail, then a cattle trail, then a rugged miner's Jeep trail, but now in Canyonlands National Park, climbs 1500 feet in a little more than one mile. **Left:** Only a few visitors to the Walking Rocks go all the way to the end of this spectacular peninsula of White Rim sandstone. The giant rock slabs at the tip are balanced on pedestals of softer material, like monstrous mushrooms.

Mike's Sky Ranch- A Baja Bonus

by DIANE THOMAS



Left: The ranch nestles at the foot of Mt. Diablo.

WITH THE OPENING of the Baja Peninsula road, one of the last lonesome areas open to vacation adventurers has disappeared. But there is still a place, easy to find on the map, a challenge to the driver, a place accessible to campers, trucks and vehicles with at least 12 inches of clearance. And at the end of a spectacular drive through desert and mountains, a modern resort offers all the amenities to those who don't want to rough it in tent or camper.

Mike's Sky Ranch has been in business for over 10 years, but only the truly intrepid made it in 1964. The "road" came in from San Telmo, 150 miles south of Tijuana. There was no resort; visitors simply pitched a tent at the base camp and washed in the running stream. By day they hunted dove, quail and deer, fished for 12-inch Rainbow trout and bagged an occasional cougar, bobcat or mountain lion. By night, they sang around a campfire and lay under

the velvet sky to count the thousands of brilliant stars.

In 1969, the present road to the ranch was bulldozed out by California-born Mike Leon. Because the north road leads in from Ensenada, no tourist permit is required to reach the ranch from the north and since no check is made on outgoing drivers from below Ensenada, it is possible to make a beautiful circle trip going in from Ensenada and returning from San Telmo along the ocean, with-



When it's time for lamb chops, they are fresh killed.

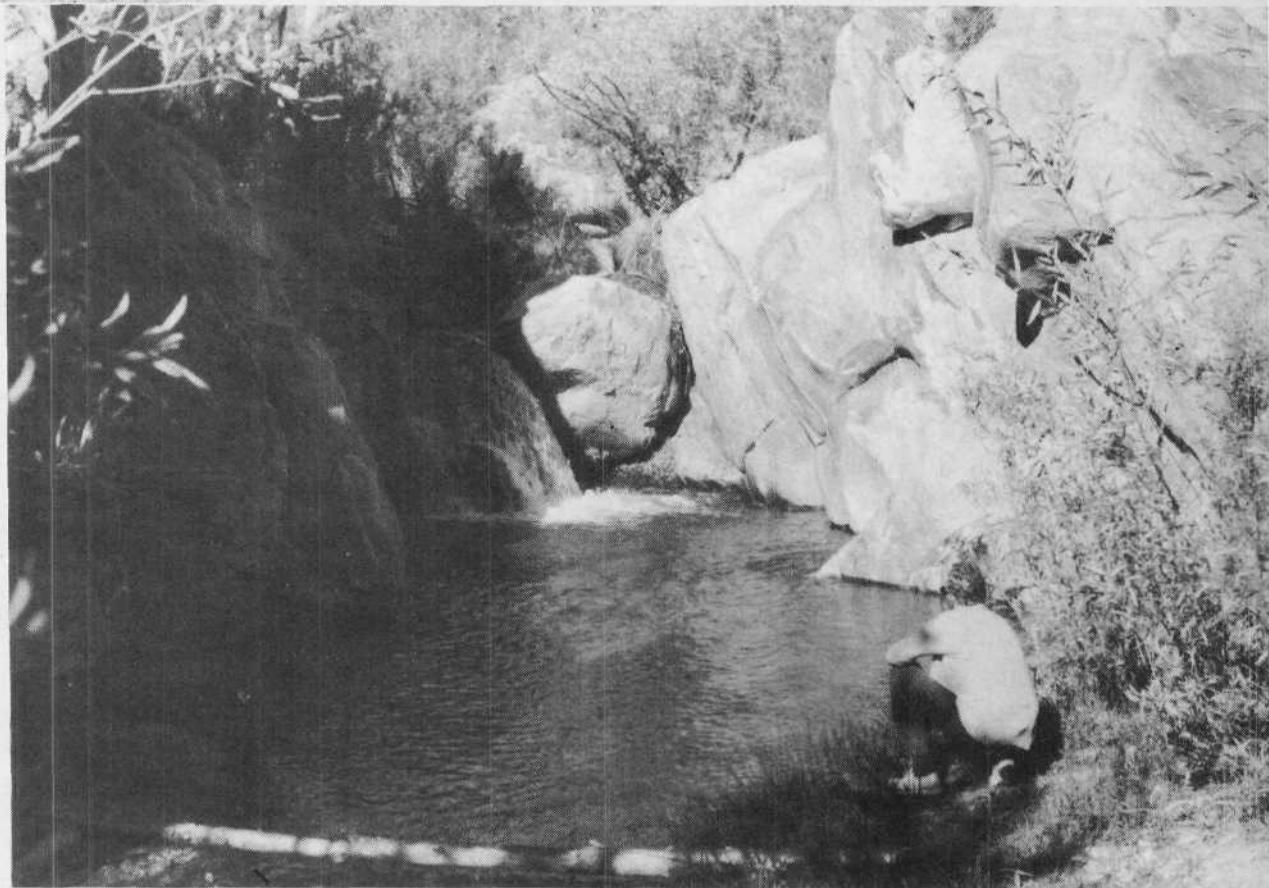
on the Gulf is being graded and paved by the government. When it is finished, visitors will be able to come in from the east by way of Mexicali on Highway 5 rather than driving all the way to Tijuana.

Mike has other plans for the resort. His road machines are busy grading spaces for trailers. When the canyon bypass is done, he will be able to encourage people to bring their trailer down and leave them while they return to their daily grind. Protected, they will be an instant vacation home for their owners. With Baja's favorable no-tax law on

ing bags laid out on the big pool table in the recreation room.

At the moment, if you have only a luxury car and a yen for trying out the ranch, the best idea is to garage your car in Ensenada, or at nearby Estero Beach under the protection of Mike's close friend, Señor Novelo, and arrange to have the ranch truck pick you up when it comes to town three times a week for supplies.

Food is family style at the ranch. The manager's wife is chief chef and the meals are not only filling, they are delicious. The numerous trips to the border to get supplies means fresh vegetables, steaks, eggs and all the trimmings are stockpiled for satisfying the outdoors man. If the day has been good for trout



Right: The trout stream is fed by an artesian well.

out the nuisance of people and car permits.

The road has one bad canyon which Mike plans on bypassing as soon as he gets the time. Then it will be possible to bring in passenger cars and trailers, but maybe he will never get around to it. He isn't anxious to make it easy; he likes it when the visitor has really worked to find the solitude.

Meanwhile, the road leading from Ensenada on the West Coast to San Felipe

trailers, plus the law permitting indefinite residence on Baja without returning to the border every six months, this will be a convenience for many Norte Americanos who don't want to drag their home behind them each trip.

The motel is expanding, too. A 10-room addition to the 16 present rooms is already started, which will be good news to those who drive down without reservations. If the motel is full, the overflow must spend the night in sleep-

catching, and it almost always is, then the fisherman can request crisp fried trout for his dinner and enjoy it while other less fortunate guests settle for T-bone steaks.

There's plenty to do besides sit by the big 30 by 50 foot swimming pool and enjoy the noisy silence. There are horses and even a mule to ride, livestock to feed, nature walks to take, games to play and a well-stocked bar for the happy hour. It's made for families with kids, for

they can play in safety and stalk the squawking geese. Many people spend two weeks finding out TV and radio are not as important as getting to know the 25 or 30 people the ranch can handle. I spent two evenings talking to a Canadian and his wife who were on the trail of old Spanish missions in Baja, and whose somewhat battered Landrover attested to fact many of the old missions are in the most remote regions of Baja.

The ranch is self-contained. Lack of telephones seems to bother no one; it avoids land sales pitches. TV couldn't compete with the charm of watching a pretty Mexican girl whose expertise making tacos would win her a national championship if ever one such contest is ever held. Even the house cats worm their way into the hearts of dyed-in-the-wool dog lovers. The drinking water, fresh from artesian wells, makes the coffee (which is always hot on the back of the kitchen range) irresistible. Electricity is generated by the ranch light plant, which sometimes develops hiccoughs, so candles are in every drawer. When everyone finally goes to bed, the

There are plenty of places to camp out along the highway between San Telmo and Ensenada.

generator is turned off. If you're a late retiree like I am, a wild game of whist by the light of an old time oil lamp is funky but fun.

Rates are so reasonable, you can't afford to vacation anywhere else. Twenty dollars per person per day furnishes you with a comfortable room, private bath and three hearty meals.

You have a choice of two roads leading south to Ensenada from the border. The toll road runs along the Pacific Coast with fine views of the ocean, and it's a high speed highway. It will cost \$2.40 for a passenger car, or pickup without camper. With a camper the toll is \$3.00. The same fee applies to cars with house trailers. Motorcyclists only pay 60c. Along the way you can drop off the toll-road to go through any of the small vil-



lages that look tempting. Just 15 miles south of Tijuana, a good KOA campsite is complete with bar and restaurant. There are also many places along the ocean where campers and trailers can be parked for the night without charge.

The other road south is Highway 3 which goes through Tecate. It is a scenic route winding through mountains and giant hills of red boulders until it joins the main highway just north of Ensenada. There is no toll to use this road.

Coming into Ensenada, watch for the big El Limon shopping center on your left. A highway sign reads "Ojos Negros Highway." The road is paved and good.

Ojos Negros is in a wide green valley with lush grass and thousands of head of cattle graze in the meadows. The road bypasses the town center and enters the barren hills without benefit of direction sign. As the road bends, the number of the highway changes to 16 and the level desert road begins to climb. Overlapping hills cover the horizon and green irrigated meadows occasionally relieve the rain-eroded slopes.

With Mexican logic, the road is being paved in two-mile strips which alternate with finished sections. On the long straight stretch leading into Independencia, a bridge has been built higher than the road. No attempt was made to tie it in to the roadway and a dangerous spine-shattering impact should be expected.

It's 12 miles into Trinidad from Independencia, and eight miles further to Mike's turnoff. The last 20 miles are true Baja all the way, requiring careful driv-

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campgrounds.

"What are the charges for camping?" \$5 for the first day and \$3 a day after that per unit. There are central toilets and showers, and a laundry room is being constructed.

"If I camp out, can I eat in the ranch dining room?" Only if there is enough supplies; motel guests come first.

"Can I get any supplies at the ranch?" Gas is trucked in in drums to take care of tourist fuel needs. It's wise to fill up in Trinidad. There are no grocery supplies to be had. Stock your larder in Ensenada.

"If I fish, can I have my catch frozen for transport?" Your fish can be either frozen, or packed in ice to bring out.

"What about other places of interest nearby?" There is a lovely waterfall 1½ miles from the ranch that supplies the trout stream. It makes a great place to camp or picnic. It's 82 miles to San Felipe on the Sea of Cortez and 50 miles to Colnett, both deepsea fishing ports. The most fascinating attraction is a four-country (U.S., Canada, England and Mexico) telescope 57 miles from the ranch on a 9,500-foot peak. It's a one-day excursion from the ranch and visitors are welcome. With a 205-inch telescope, it is used both to study the planets and as a tracking station. (On clear nights, about 40 minutes after sunset, ranch visitors can see satellites sparkling as the dying sun hits them.)

"Can you fly into the ranch?" Yes, you can either rent a plane at Tijuana, or fly your own craft in. Be sure to get clearance for the border. The ranch has Unicom at 122.8 if your plane can contact this way. Otherwise, simply buzz the ranch and set down on the landing strip four miles away to the southeast. A truck will be sent to pick you up. The runway, 4,750 feet long and 4,400 feet up, will handle 310s, 410s and Commanders. There are 20 tie downs for light planes.

When it was time to leave, I felt there wasn't a thing missing. I had fished, swam, hiked, ridden a trail on a shaggy horse, sat around a pot-bellied stove and listened to an old time organ. And then, right on cue as I climbed in the truck headed for Estero Beach, the craggy old mountains gave a deep throated rumble and the water in the pool danced in artificial waves from end to end as Baja had one of its infrequent earthquakes. It was better than a \$4 movie. □

ing of about one hour. When the paved road is finished from Trinidad to San Felipe, Mike will bulldoze the single track into a two-car-wide road. By the time you've bumped and lurched over those last 20 miles, a frosty glass of Mexican beer sure hits the spot.

The road has stretches of fairly heavy sand as well as sharp rocks. We stopped to help a man headed for the ranch who had dumped his Kawasaki Z1 in one of the sandy spots. He estimated he had done about \$500 worth of damage to his bike simply because it was unsuited to the road. His advice was to truck a dirt bike as far as Ensenada and then ride to the ranch, or settle for a street scrambler.

Some questions the first-time visitor might have can be answered easily.

"What kind of fishing tackle should I bring?" Manager Don Donaldson has furnished many people with a tree stick and some feathers from the ranch chickens, and they catch trout!

"What about guns; does the ranch furnish them?" No, the ranch furnishes no firearms. Bring your own, but be sure you know the rules. Check with your local Mexican consulate. Best way to avoid red tape is to belong to a gun club; they can help you with the forms.

"What's the best time of the year to go?" The ranch is open year-round. In winter, the 3,900-foot elevation brings three inches to one foot of snow, but it doesn't last. In summer, it's a cool 75.

"Is there enough camping space on busy weekends?" The ranch covers 17,000 acres, seven miles of which are

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Bill McHaney's

by HAROLD O. WEIGHT

A 30-year-old scene in the high desert from the Harry Vroman collection.

BILL McHANEY — nobody ever called him William — was Twentynine Palms' oldest oldtimer. Only Indians lived at the oasis when he came in 1879, prospecting. There were earlier white sojourners — Twentynine Palms had a nice little mining rush under way in 1874. But the greater excitement of Death Valley's Panamint stampede that same year drained interest away, and the boomers vanished with the boom.

Bill McHaney came and liked what he saw and remained until his death in 1937. And, remarkable for a frontiersman of his time, he soon made friends with his native neighbors — friendships that endured.

Old Bill is remembered in his chosen land for many reasons. Most often recalled is his late arrival at his own funeral. Most important, probably, was his discovery in 1895 of the Desert Queen mine, in what is now Joshua Tree National Monument. The Desert Queen is estimated to have produced more than \$2,500,000 — little of it, sadly enough, for Bill.

But, for me, the legend of Bill McHaney is above all the story of what must have been the most laborious and determined search for a lost golden ledge that any man ever made. A quest through 30 years that left a mountain trenched and terraced by hand as enduring evidence of McHaney's unshakable faith in the word of an Indian friend.

Bill McHaney was born in Gallatin, Missouri, March 25, 1859. He came West by ox team, with his parents, when he was about 18. For perhaps a year after his arrival in California, he herded cattle for his father in the high meadows of the San Bernardino Mountains. But as he herded he prospected, and soon the gold fever took over.

"I left San Bernardino on my first prospecting trip in '78," he said. "The following year I kind of made prospecting my business."

He first worked out from Old Woman Springs, east of Lucerne Valley. Then he heard of Twentynine Palms and moved his camp. He built his first shelter, of palm fronds and ocotillo and "this and that" at the oasis when he was 20. Twentynine Palms would remain his home for 57 years.

There seems to be no record of what Indians were living at the oasis in 1879. A census of 1900 lists three families there: Two Chemehuevi — those of Jim and Mike Boniface — and one Serrano — that of Jim Pine. Jim Boniface was recognized as chief. Bill knew all of them.

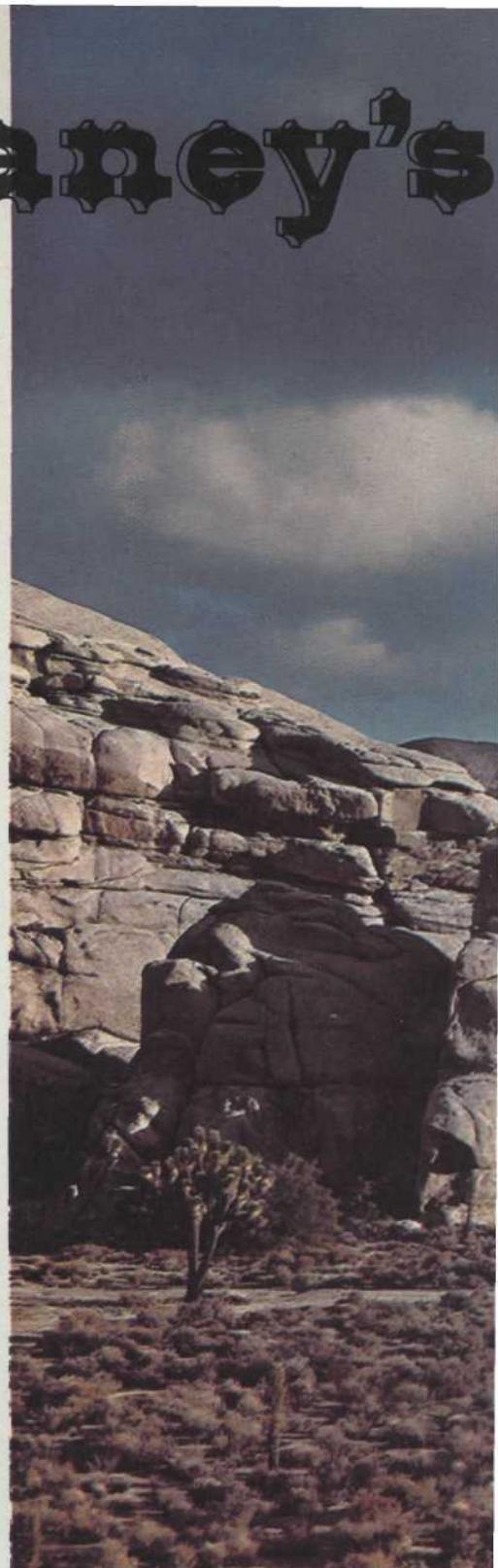
The years made McHaney a good prospector, and his discovery of the Desert Queen showed both his ability and his stubbornness in following a lead. He told the story to Frank Rogers, pioneer Twentynine Palms land holder and developer.

"You know, I discovered one of the biggest gold mines in these hills. In the summer of '94 I was over in Queen Valley, about 12 miles south of here (the oasis), and I run onto some rich float. It took me five months to locate the real deposit. On January 24, 1895, I found her, and I called it the Desert Queen mine. In a place a couple of hundred feet long, four to six wide, and not over 10 feet deep, they took out over \$400,000. She went over \$3,000 a ton."

"That put you on top of the world?" said Rogers.

"No," said Bill. "I never got a damn dime out of it. Some lawyers and city folks got it all, but that's a long story."

In detail it would be a long story, and



one that is not entirely clear. Bill got more than dime out of the Desert Queen, but only a fraction of what he should have received. Maud Russell, early Twentynine Palms historian, blamed poor management and wild-spending by Bill's brother Jim. The Desert Queen, while mining rich ore, went into the hands of receivers, eventually came back to the McHaney family, and finally was taken over by a bank.

Lost Indian Gold



"Bill tried to protect his brother, but it bothered him, for he was honest," wrote Miss Russell. "And by trying to protect his brother, he lost all he had."

Willis Keys, recording for Joshua Tree National Monument, confirmed that part of the story. Willis is the son of Bill Keys. McHaney spent his last days at Bill Keys' Desert Queen ranch, named for the mine which Old Bill had discovered. (See article, page 14.)

"All the money was gone," Willis Keys said. "Bill ended up with nothing, really. And so he went back to prospecting. And years before — I guess when he first came out here — some old Indian told him about this place over in Music Valley. This hill. There was a very rich mine on that hill. And Bill believed him. And maybe the Indian was right. Maybe it's still there, somewhere. Bill was convinced this old Indian was telling

him the truth."

Bill was indeed.

The story of his life-long search — which probably would never have been made had the Desert Queen been properly managed — has survived only as bits and pieces. The only version which might be first hand is the one which Frank Rogers said McHaney told him at the Twentynine Palms oasis in 1936.

"Captain Jim Pine was chief of what



McHaney set up this crude camp in Music Valley in 1905, far away from any water. This was his home part of every year, as he searched for the gold. Twentynine Palms Library collection.

was left of the Serrano tribe," Bill said. "He used to have his shack right over there under that big cottonwood (at the oasis). He was about a hundred years old when he died in 1903. I helped bury him in the Indian burying ground.

"Jim was a good Indian, and we became very well acquainted. Many are the good times we had. He would go into the hills for a couple of days and return with a poke of gold nuggets, and then we would get some liquor and celebrate.

"Captain Jim told me just before he died where he got the gold. About a week before his death we started out together and he was going to show me the place. He was so feeble he could no longer follow the trail. I tried to help him on, but Captain Jim couldn't make it. We sat down to rest, and he told me he could not go any further. But he described the place and told me how to get there.

"Captain Jim's directions, given me from where we stopped to rest, were as clear as could be. I made a camp in Music Valley in 1905 — over 30 years ago — and I am sure that is the Valley Captain Jim referred to. I have been going between that camp and my home place here ever since, packing in grub and water and bringing out a little ore now and then. I'm just about to strike pay dirt now."

Confusions always plague lost mine legends. A very puzzling one arises here from McHaney's repeated identification of his informant, Captain Jim, as Jim Pine. He says the man was chief at the oasis, was very old, died in 1903, and

was buried at Twentynine Palms. Now Captain Jim Boniface fulfills all these requirements. (According to census records he was 73 when he died.) But Jim Pine does not. Pine was 63 in 1903, and instead of dying that year, succeeded Boniface as chief. He did not die at Twentynine Palms, instead moving with his family, several years later, to the Mission Creek Reservation.

To enrich the confusion, a third Captain Jim was at the oasis the first year McHaney was there, and possibly later: Jim Waterman, a Paiute from Nevada, supposed to be a "bad" Indian. And Maud Russell says he was the one who told Bill about the Indian gold:

"One day while they were working at the Desert Queen mine, Bill McHaney showed Jim Waterman some of the ore.

"Jim said: 'I show you ore like this. Enough, too, for many white men.'

"Waterman took Bill to the place where the gold was supposed to be. Showed him a hill, and Bill dug there for 35 years, but never found it. The trenches may still be seen."

Jim Pine is the informant in another story, by Dan Morris in the *Palm Springs Villager*, May-June 1950. It gives additional details, but the source is not revealed. Pine had the gold, but had not been to the mine. The ore had been handed down from his ancestors. Spaniards had discovered the mine, but mistreated the Indians. When they "left" — method of their departure not specified — the Indians filled in the mine and con-

cealed evidence of its location. But it was on "a hill the color of night" above a valley where the wind sounded like "good spirits singing." When McHaney found this black hill, with Music Valley spread out below, the story said, he was certain he had reached his goal.

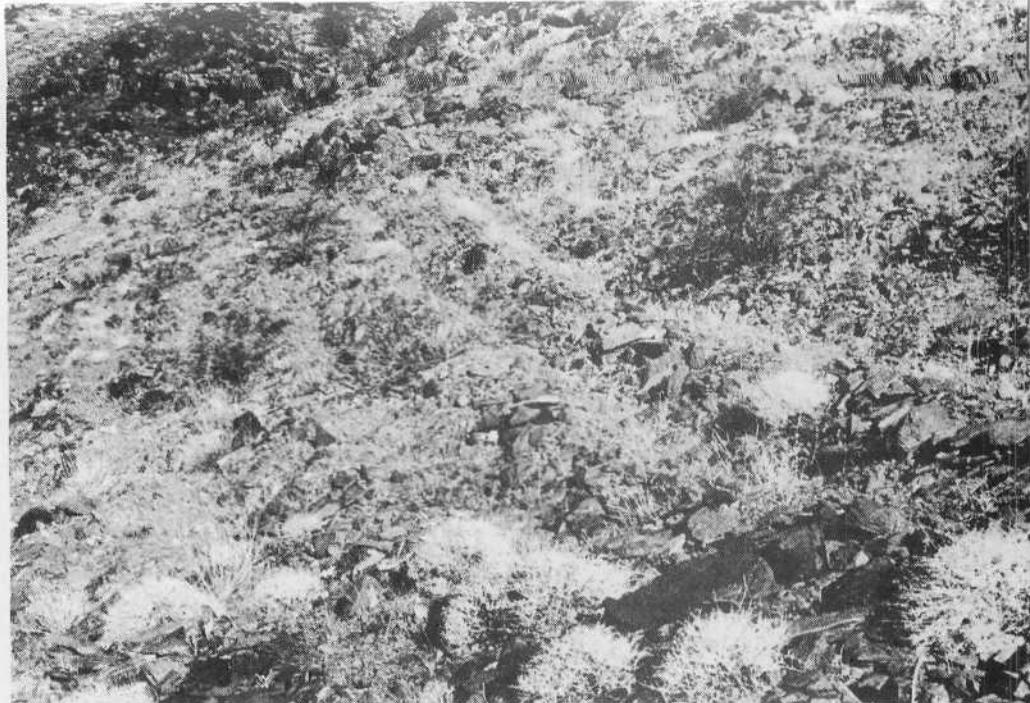
In support of Jim Boniface as the Captain Jim, the Bonifaces apparently did know the location of a rich gold mine in that area. Clara True, Indian agent with headquarters at Banning, made several visits to the Indians at Twentynine Palms oasis in the early 1900s. She wrote to Maud Russell in 1942:

"I recall that old Mike Boniface (Jim's brother) had a mining claim a several-mile drive from the water hole. The samples he brought me assayed as good gold-bearing stuff. I found that an Indian could not file on a mining claim but that an Indian superintendent as guardian could do so and probably hold the claim for the Indian. Mike was so sincere in his belief that he had something that on one of my trips I took Horace Bryan to drive the government team and we followed Mike to his location and put up a notice of his claim.

"Mike was killed not long after that and I never knew what became of his gold mine. I haven't the slightest idea where it was. I recall picking up a very white skull near the 'mine.' It had a hole in the back and a piece of lead inside rattled around. I have an idea somebody didn't like somebody around there in the long, long ago. I remember how clear the sky was that day and how a bluebird fluttered about. It was very, very blue. Mike said there had to be water near or the bird wouldn't stay."



Right: Closeup of trenching, showing boulders and rubble which meant enormous work, especially for a man in his seventies. Work started as early as 1905. Erosion has filled in enough to form shallow terraces. Below: Trenched hill, seen from the top of McHaney's black hill, with small wash draining from hill into Music Valley. McHaney must have found rich gold float either in this wash or the two smaller ones that join to form it. Bottom: McHaney trenched his hill to the very top in his determined effort to uncover the hidden Indian gold.



If Mike was killed not long after, this must have been the trip Miss True made in May, 1909. In September that year, Mike Boniface was fatally shot by Willie Boy, the High Desert's famous Indian outlaw. Mike was the father of Isoleta, the girl Willie Boy took with him and later killed.

But — was Mike's gold mine the one Bill McHaney was seeking, or is this a second Lost Indian Gold?

Take your pick of the Captain Jims. The important thing was what he said, not who he was. What were those explicit directions given Bill McHaney? Bill must have kept them exclusively to himself. We do know where they led him,

but also that they were not explicit enough, or that Bill misunderstood them.

All the stories, all the clues do center around Music Valley. Most pioneers agreed that McHaney gave it that name because of the sound of the wind through the thousands of Mojave yuccas found in the valley. And the wind through those yuccas does make music of a kind — a lonely but beautiful sound in a stark but satisfying land.

Music Valley lies a dozen road miles south and east of Twentynine Palms oasis, in the Pinto Mountains. Much of that road can be dangerous for passenger cars. Both rocky sections and deep sand are encountered, and a hike out is the only solution if trouble occurs. A four-wheel-drive is very convenient.

After leaving pavement, the twin-rut trail follows the big Pinto Cove wash to Gold Park Canyon, up the canyon and through Gold Park Valley. Gold Park was a fair-sized mining camp from about 1905 through 1915. The whole area is scarred and dotted with extensive workings, gold mines and prospects — and open tunnels and unfenced shafts which can be deadly for careless or foolish visitors.

Some rich ore, mainly at the surface, was found here. Captain Jim's gold could have come from Gold Park, but Bill McHaney was certain that it did not. There were many location notices when he first came to Music Valley, and most of its development occurred while he was there — but he was never diverted from his work at Music Valley.

That valley lies only a couple of miles beyond Gold Park. The hill McHaney trenched is a continuation of the range containing Gold Park's mines. The road leaves Gold Park through a low saddle to the east, winds around a couple of hills, and drops into the big wash that leads into Music Valley. As the road drops, McHaney's trenched hill can be seen, to the left, if the light is right.

And there is no escaping that "hill the color of night," which is supposed to have been McHaney's goal. It lies directly ahead, across the broad wash. There is a splendid view of Music Valley from its top, and McHaney did set up his permanent camp in the mouth of a little canyon on its east or Music Valley side. But this black hill is not the hill McHaney spent his lifetime trenching.

I first saw that trenched hill 25 years ago and, since I had not heard McHaney's story, wondered what crazy kind of mining that was. I didn't look for it again until a few weeks ago, when I wanted photographs. I knew just where it was, though.

Only it wasn't there.

Jim Pine, Serrano Indian who succeeded Jim Boniface as "captain" of the Indians at Twentynine Palms, with wife Matilda. Bill McHaney said Pine showed him gold and gave directions to its location. Photo, about 1910, shows cook stove, a proud possession of Matilda's, believed to be first in Twentynine Palms. Twenty-nine Palms Library collection.

I went back again, and again, casting further each time. No trenches. And I began to wonder if I had imagined it, or if it was possible time and the elements could have obliterated it. I knew mines could be lost; this time I had lost a mountain.

The fourth time, I stood on the top of McHaney's black hill early in the morning, and looked north across the wash that marks the west entrance to Music Valley. And there the trenches were—not only to the west of where I had been looking, but on the wrong side. Yet, I would have taken an oath I knew exactly where that hill was!

We must remember, when considering the possible authenticity of Mc-



Haney's gold, that this man was a real prospector of proven ability. He would not have trenched a mountain solely on the strength of any man's story. He must not only have seen the gold Captain Jim brought in, but have found rich float himself and have been unable to locate the ledge from which it came. Nothing else can explain what he did and the manner in which he did it.

The peak where McHaney labored is drained on the trenched side by two small washes which join to form a broad V, and the broader wash in which they combine drains on into the valley below. All McHaney's work was done within that V, most of it in the area drained by the eastern wash. Bill must have found his high grade specimens either in that wash or more probably in the combined drainage below. Then, unquestionably, he would have prospected every possible outcropping above for the ledge from which the float must have come.

And when he failed to find it?

A Spanish tunnel filled in by Indians is so typical a feature of so many lost mine legends, that I discarded it almost automatically. Then I saw McHaney's hill. He dug trenches in parallel lines, 10 or 15 feet apart — scores of them covering hundreds of feet of steep slope, some of them hundreds of feet long. He dug only with a shovel, through the overburden that water and gravity had brought down, and cleared away earth and loose rock covering any parts of outcropping ridges and ledges. Such Methods can only be explained if he was looking not for a ledge, but for a filled in shaft or tunnel.

Which he never found.

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"So he spent most of the rest of his life digging on that one mountain," Willis Keys said. "By hand. Looking for that mine — that outcropping. That was his project. Of course, he didn't work at it steady. In later years, when he got more feeble, he spent quite a bit of time over at my Dad's ranch."

"But every year he'd want to go back over there, usually in the spring time, when the weather was nice. Then, when it got too hot, why Dad would go over and get him and bring him back here. At the last he couldn't do much. But he was pretty active, considering he couldn't see very well and had rheumatism pretty bad. He'd get out there and go at it."

"He believed what that Indian told him."

One of the often repeated McHaney legends stems from those last visits to Music Valley, when the old man was virtually blind. This version comes from Frank Bagley, who pioneered Twenty-nine Palms' first store.

McHaney sat in his shack, idly talking with a friend, when the friend looked down and saw a large diamond-back rattle almost touching Bill's foot. The friend knew rattlers. Any sudden movement on Bill's part, any sudden showing of alarm, and the snake would strike. While the friend frantically sought a solution, Old Bill seemed to sense the problem. Very slowly, very softly, he reached down and touched the snake, and slowly and quietly withdrew his hand. The two men then sat without movement until the rattler crawled away, "also slowly and quietly, for the snake also knew men."

Believe the story or not, as you

choose. I do. But — believe it or not — if you should seek the lost Indian gold in snake season, remember this is wonderful rattler country. Only last July (1975), while photographing McHaney's trenches, I found myself disputing the ownership of a small black hill with a very large rock rattler. It was early enough in the day to be still reasonably cool, and he probably was returning from a breakfast hunt.

I neither reached out to pet him, nor awaited his departure, nor did I offer any argument as to the hill's ownership. I picked the most open way back to my car and left the scene as quietly as the snake left McHaney's camp.

Bill McHaney spent the last few months of his life at the Desert Queen ranch, high in Joshua Tree National Monument, cared for by Bill and Frances Keys. There he died of pneumonia early on the morning of January 5, 1937. The word was sent down to Twenty-nine Palms. Bill wanted to be buried at the ranch. But the pioneers of Twenty-nine Palms felt he belonged to them, and they wanted him safe in their new cemetery. Bill Keys agreed to bring McHaney

down, and went ahead making a coffin for him.

The services were set for Wednesday afternoon, January 6. But the night before, a heavy winter snow storm buried the higher elevations of Joshua Tree National Monument and made the roads from Keys' ranch impassable. There was no way, even, to get word out.

Everyone who knew him seemed really to like Bill McHaney. Twenty-nine Palms and the valley turned out to honor their friend, their oldest old-timer. Two o'clock passed, but they waited patiently. And waited. And waited.

McHaney came down to his funeral the next day, when the roads were barely passable.

But it really wouldn't have mattered if he hadn't come. Bill was too much a part of the desert to want or need any civilized planting. And his true monument is far distant from Twenty-nine Palms cemetery — a mountain shaped by his own hands and hopes, high up in the Pintos, high even above the valley where yuccas still make music when the wind blows. □

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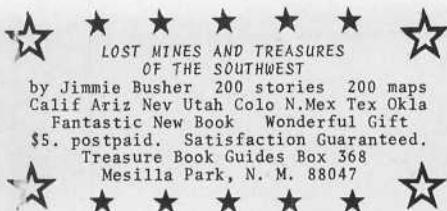
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THE WALKING ROCKS

Continued from Page 27

softer material, like a gigantic mushroom.

After a picnic lunch in one of the cool, picture-window caverns, we drove a little farther along the White Rim to the "Walking Bridge." This curious feature in the White Rim sandstone is officially named Musselman Arch, but is actually a natural bridge close to 100 feet long. It is about six feet wide and four feet thick in its center, and perfectly flat on top. This makes it possible to walk across the bridge, if you don't mind the appalling depths below the span, thus making it Lins's "Walking Bridge." Lin mentioned that on earlier trips, one man had crossed the slender bridge on a bicycle,

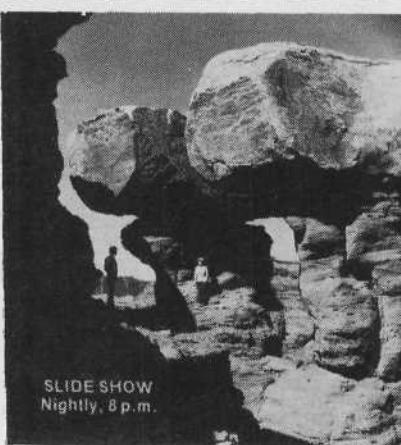
Lin Ottinger's "Walking Bridge" is a slender span of White Rim sandstone officially named Musselman Arch. Only the braver tour passengers walk across the six-foot-wide bridge, although one fellow once rolled across in his wheelchair.

while another had rolled himself across in his wheelchair.

Our return to Moab provided still more thrills. As we approached the trail fork below the Shafer Trail, Lin casually headed up that hair-raising series of switchbacks. After an unforgettable mile or so, our two laboring VW buses reached the summit of that historic grade and we paused there to look back at where we had been 1,500 feet below, a sight I never cease to appreciate.

From near The Neck on the Island in the Sky, a narrow point in this elevated peninsula just above the Shafer Trail, we traveled a dirt road through grassy meadows dotted with grazing cattle, then joined the paved Dead Horse Point Road, Utah 313, to drop down into Sevenmile Canyon for a return to U.S. 163 and on south to Moab, a spectacular trip in itself.

In Moab, the explorers-for-a-day in our little group bade each other farewell, then parted to go their various ways, but each took along memories of an incomparable day in the canyonlands of southeastern Utah, an adventure in which we had personally walked upon the Walking Rocks and Walking Bridge.



Walking Rocks in Canyonlands

DESERT QUEEN RANCH

Continued from Page 15

The horizontal rotation of several stone discs crushed the ore. Keys did custom milling for other miners in addition to his own ore.

Seldom was anything thrown away. Living in such isolation it was necessary to become self-sufficient. At one time Keys bought the entire contents of a junkyard and hauled everything to the ranch where it all lies rusting in neatly arranged trays. He eventually owned several hundred acres, including some of the best grazing land on the desert. By the 1940s, however, over-grazing and decline in rainfall reduced the success of cattle ranching and the difficulties of mining were increasing. In 1936, Joshua Tree National Monument was created, imposing restrictions on open range, mining and homesteading. So an era drew to a close for all but the hardiest.

Keys became embroiled in a land dispute with a neighbor which ended in a gun battle in 1943. He shot and killed Worth Bagley and was convicted of man-

slaughter and sentenced to San Quentin Penitentiary. He was paroled in 1948 and stated afterwards that he didn't regret the prison time as it was like a college education; and that he didn't regret killing Bagley. In fact, he went to the site of the shootout and erected a headstone commemorating the deed. Lawyer-writer Erle Stanley Gardner was influential in obtaining not only Keys' parole but a full pardon in 1956. He was 69 years old when he returned from prison to resume his active life on the ranch. He continued to make improvements and to salvage materials from many abandoned mining sites. These were fast becoming collectors' items.

On the tour one is amazed to see the vast assortment of mining tools, old cars, a hayrake and threshing machine, an old Studebaker wagon with fenders and a Fordson tractor. There is a 1913 chain-driven Mack truck with 10-inch iron rims and solid rubber tires; a pug mill that mass-produced bricks; and a fence built entirely of Joshua tree trunks.

After Frances Keys died in 1963, Bill made arrangements to sell his land. The National Park Service eventually became

the owner with Keys staying on as a life tenant. He died in 1969, before his 90th birthday.

Today, the Desert Queen Ranch no longer is the scene of bustling family life and milling activities. Yet, the ranch still relives its colorful past with each tour. Tape recordings were made in the 60s by foresighted Monument personnel and segments are heard where Keys reminisces about the old days. Visitors feel that he is actually accompanying them around the half-mile loop trail, pointing to different objects, reflecting on their uses, and spinning yarns as they come to mind. Many have commented how hearing Keys' voice is a special highlight of the tour.

Because of the wealth of history it portrays, the Desert Queen Ranch is listed on the National Register of Historic Places. While not old by some standards, it reflects the pioneer spirit of the region and tours are a Bicentennial project of Joshua Tree National Monument. This, then, is the story of a desert settler and his adaptations to a challenging land. Those efforts are remembered at the Desert Queen Ranch. □

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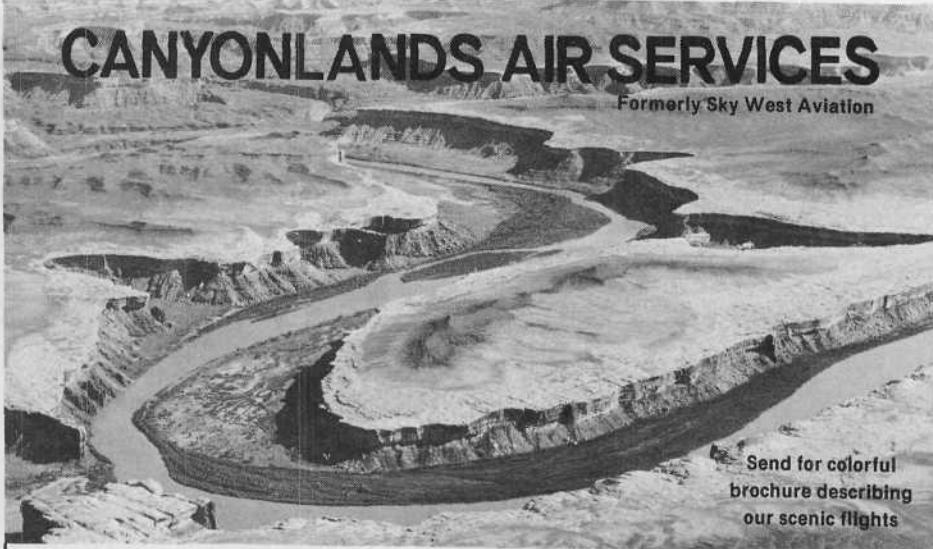


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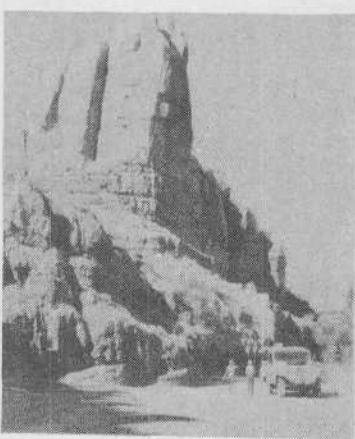
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TEXAS WHITETAILS

Continued from Page 9

wobbly newcomers is a number one requisite for the first week, and the radio pulse rate showed this to be true, the fawns being active for only 10-30 minutes a couple of times a day. As is to be expected, these active periods mainly centered around nursing and grooming by their mother who is never far away, ready to drive off all intruders, including her own yearlings.

The doe nurses the fawns only once or twice a day and once or not at all at night. This may look like mighty poor provisioning, but it is actually not so. Chemist F.J. Ruff's analysis of the composition of deer milk showed that it has twice the total solids of Jersey cow milk, nearly three times as much fat, and more than three times the protein. After nursing, the fawn follows the doe a little way to a new bed site, selected, as another study showed, by the fawn itself. Shifts in the bed site in and out of the sun occur during the day, the fawn regulating its temperature this way. A bed site may be as much as four degrees cooler than the environment on a hot day. The fawn, lying in its bed is hard to see; the more so when, in accordance with ancient rules of behavior for brand new fawns, it "freezes" when alarmed. Body flat on the ground, neck out, chin down, ears back, it lies perfectly still, even when a fly lands and tours around its nose.

The end of the first week sees a big change in the erstwhile puny fawn. Having gained at least 10 percent of its birth weight per day, it is much stronger and more agile. Now active 10-15 percent of the time, it runs to meet its mother, following her greater distances, and indulging in some exploring on its own. No more of this "freezing" stuff, the alarmed fawn taking off with speed. In fact, as Jackson et al found, a 6-10 day old Texas fawn can outrun a man. Around the fourth week, the twins get together for the first time. Activity increases markedly with the fawns seeking out their mother and browsing with her before bedding again. Shortly they all join the doe's old group of females and yearlings, the youngsters becoming stronger all the time and increasing their running skills, until at about four months of age they are as active as the adults.

Taking a good look at all this, Jackson and his cohorts decided that the fawn's spotted coat and quiet existence are survival basics. Also important in avoiding predation is the fact that the doe does not visit them on a regular schedule and then only for a short time, nursing quickly and keeping them spic and span with no fecal or urine odor about. The habit of bedding in a different spot after each nursing, and parlaying the youngsters in different locations until old enough to escape by running are also survival adaptations. Incidentally, what action there is among the fawns themselves usually takes place around noon — a fine Texas touch — since it is then that their arch enemy the coyote is taking his siesta. Records show, however, that the little gent fawns are seemingly born curious and independent. They tend to be more active than the little females, all of which, while no doubt preparing them for their future dominant roles, still means that they are concealed less and hence more subject to predation, getting lost by straying too far, and more prone to accidents.

While the does have been dealing with all these family problems, the bucks have been growing their antlers. Increased testicular activity speeds up the hardening of the bone, and by October the hair and skin covering is beginning to be shed. The formerly friendly little bachelor groups break up promptly, the bucks viewing each other now as potential rivals in the fast approaching rutting season. By November the bucks are tough and aggressive, the larger thicker-necked ones dominating the inferior ones and everybody else in sight for that matter.

Interesting enough, among the Texas herd studied by Thomas, Robinson and Marburger, there is a rigid code of manners indicating the buck's frame of mind. It consists of five distinct steps, always followed in order, and each indicating an increase in warlike intent. No. 1 is the "ear drop." Annoyed, the deer drops its ears along its neck. If this does not correct matters, next comes No. 2, the "hard look" wherein the buck, ears back, head and neck extended, stares intently at the adversary. If the adversary does ditto, the buck proceeds to No. 3, the "sidle." Turning his head and body 30 degrees from the antagonist, head erect and chin tucked in, hair up

along his neck and body and rump, he takes several sidling steps toward the adversary. The opponent may duplicate. If so, then comes No. 4, "the antler threat." The buck lowers his head so that the tines are pointed directly toward the rival. Usually, the other retreats at this point if not at one of the previous steps. But if he stands his ground and also lowers his noggin with his hardware pointed in turn . . . comes No. 5: the "rush." Whambo! They crash together, shoving and twisting back and forth until the larger drives the smaller off his feet. This ends the fight.

The ladies, it seems, also have differences of opinion. Their pattern of aggressive intent also consists of the ear drop, the hard look and the sidle in order. If these do not work, the annoyed female lunges toward her adversary, striking out with a front foot. If she has met her match, the other strikes back. Both then rear up on their hind legs and flail out with both front feet, the battle continuing until one finally quits and departs. Fawns of seven to 10 months of age, rowing among themselves, use the female threat pattern.

While not as gregarious as mule deer, whitetails still have a strong herd instinct. If one sees or smells something it cannot identify, it stamps a forefoot, the other deer all pausing to listen. A greater alarm calls for a snort — heard at least 300 feet. If escape is in order, the last warning snort rises to a whistle, and every deer within earshot is off and running, white tails up and flashing.

The temperature problem posed by the hot and arid Southwest is met mainly by that old inherited energy-saving life style of the deer clan. Daily activity periods of moving about feeding are well interspersed with long rest periods in bed. Cud chewers, deer spend much of their day lying quietly in the shade, working over the groceries taken aboard earlier. Well equipped with sweat glands, they are cooled by evaporation and if the heat becomes excessive, they pant. Moisture is provided in the browsed vegetation, deer being selective feeders, choosing the food highest in nutrition and moisture content, and by visits to secret water holes in the early morning and evening.

All in all, these small western members of the whitetail clan are well adapted to Southwest living. □

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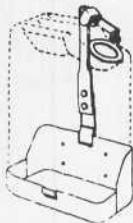
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MORE ABOUT:
Green Obsidian, Glass and
Crucible Buttons

PRIOR COLUMNS, regarding the above items, that appeared in the October, November and December 1975 issue of *Desert*, brought an excellent reader response. We have letters from miners, assayers, university professors, rockhounds and other interested individuals. Some of these were given special answers. The others, we hope, will consider this column as an answer. Some of the letters were included in the "Letters to the Editor" column.

We are especially grateful to the assayers that wrote about crucible buttons. They gave us much information that we did not have. We would like to quote from a letter by Walter G. Statler, of the Iron King Assay office, Humboldt, Arizona. He has offered the following addition to our story.

"There are certain chemicals, known as fluxes, that are added in order for the ore to melt. The basic ones are: Litharge (lead oxide), Soda Ash (sodium carbonate), and Borax Glass (anhydrous sodium borate).

"These are added in proportioned amount and mixed with the pulverized ore in the crucible, and placed in a hot (1200 degrees C) furnace. These fluxes melt at a lower temperature than the ore itself, and by so doing, take the ore into molten solution with them.

"The litharge is reduced to metallic lead and settles to the bottom of the crucible. It comes in contact with the precious metals in the ore, which go into solution with the lead. When fusion is complete, the molten mass is poured into a cast iron mold, and the lead sinks to the bottom.

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the lead is done by a process called cupellation. The cupel, a small dish made from bone ash, is placed with the lead button in it, into a furnace. The lead becomes molten and oxidizes, soaking into the bone ash cupel.

"At this point, there remains a small bead of combined gold and silver which is called a Dore's bead. The bead is weighed, and the weight recorded. The bead is then placed in a small vessel of dilute nitric acid, which dissolves the silver, but not the gold. The gold is weighed for the gold assay, and its weight subtracted from the first weight, to give the silver assay."

Along with his excellent letter, Mr. Statler sent samples of the lead button attached to the crucible button, a cupel with the precious metal Dore' bead attached, and various colored slag crucible buttons. These will be on exhibit as the Desert Magazine office. We are grateful to Mr. Statler for his concern, time and samples.

We received many examples of crucible buttons, which were of real interest to us. The most unique group, however, came from Mr. Stewart Deighton, Sun Valley, California. He has been experimenting with the types of colored glasses he could produce by adding different types of fluxes. He has used borax, zirconium and zinc oxides. From these, he has produced a marvelous array of different colored glasses. Most of the samples he sent us were transparent, or nearly so, with very vivid colors. He was careful to point out that his results were "not typical of normal slags from assay endeavors." Typical or not, they were of interest to us, and indicated the possibilities that might be found at mines where unusual conditions exist.

The references we made to green obsidian brought responses that we had not expected. Perhaps we should have been a bit more specific in pointing out that we were referring to a clear obsidian that could be cut into faceted gems. The glass that is being offered as obsidian is of this type.

We received very unusual opaque obsidian samples from two different people. One, from Oregon, is a gray with perhaps a hint of green. From an unknown source, we received a yellowish obsidian, again with only the faintest hint of green. Both were too opaque to be viewed with transmitted light. Our

students did not think these were green, but admitted that if another color had to be attached, green was the most likely. Even though we do not feel that these two samples were green, they certainly indicate a possibility that a green obsidian may be found. Keep looking, folks, you may be able to show us that green obsidian.

The green obsidian story brought a very interesting response from Professor Earl Ingerson, of University of Texas, at Austin. He sent us a piece of transparent yellowish obsidian with a faint, but definite green color. This came from the Peruvian Andes, at about 12,000 feet elevation.

This piece was a delightful surprise and comes as close as any to the material which we (with tongue in cheek) say does not happen. Along with the sample, he sent a scientific paper describing the obsidian and the geology of the area where it was found.

This piece of obsidian is somewhat egg-shaped, with the surface covered with etchings that look much like "worm tracks" in decaying wood. This type of surface is nearly identical to that found on some tektites, which were also covered in this series of articles.

We immediately asked why the great similarity to tektites, and received back a three-page letter describing differences, both visible and invisible. We were pleased (and flattered) that a busy professor would take the time to send us large amounts of information. As a result, we are becoming fast friends, with visits next fall being discussed.

May we digress for a while, and enlarge upon the sentence above? The preparation of a column such as we produce is fun (and we get paid, too!). The research that we do in a somewhat limited way always teaches us something, which in the end is really why we do it. If we

learn something, then we hope that others learn from what we write.

The letters and samples that we receive from our readers are an added bonus. When we make good friends from the exchange, we feel that we have gained far more than we originally hoped from our column.

Most of the letters that we have received have not resulted in forming firm friendships, but the fact that a good number have written, and offered suggestions and criticisms, indicates to us that the potential for a friendship is there. If the friendship did not develop, then the fault is ours. □



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Remembers Palisade . . .

In reading Mary Francis Strong's "Plucky Palisade" (March, 1976), it was almost like listening to my mother reminiscing the Old Days in Palisade. The proprietor of the Winchester Saloon was my father, J.W. Ebert. He also owned the Palisade Hotel and Restaurant and nearby ranch in Pine Valley.

My father was born in Carson City in 1865, and my husband and I have made many trips to the area trying to locate more information. His father and mother are both buried at the "Mainden Graven Cemetery" in Beowawe.

MRS. JOHN D. RATCLIFF,
Gardena, California.

Golden Queen Nostalgia . . .

I found the article about the old Golden Queen at Mojave in your December, 1975 issue most interesting. I worked in the Golden Queen assay office for about 10 months in 1938 and 1939. In those days a job was a job so that was 10 straight months without a single day off. Your article, therefore, has a bit of nostalgic significance for me.

There is one parenthetical story concerning life at the Golden Queen that might be of interest to your readers. The main hoist room was underground about 700 feet inside Sole-dad Mountain from the mine portal shown in your pictures. Besides being underground, it was further enclosed to retain a bit of warmth from all the electrical equipment and the bodies of miners who flocked in at lunch break for a comfortable place to eat and socialize a bit. The lunch scraps attracted mice and the mice attracted a crippled old tomcat of dubious ancestry.

Somewhere in his long and eventful life that old Tom had lost much of one front leg, so he wasn't very great at chasing birds and young rabbits outside with the daylight crew. He took the easy way. He found a permanent home underground where it was cool in summer, far from the oppressive desert heat. The hoist operators provided a comfortable bed near the hoist motor resistors, and the mice and miners provided plenty of food.

So the cat prowled the mine, snatched wayward mice and acted fairly appreciative toward his human benefactors. Besides purring a bit and rubbing against a boot or two, he accompanied each new shift from the mine portal to the underground hoist room and es-

Calendar of Events

This column is a public service and there is no charge for listing your event or meeting—so take advantage of the space by sending in your announcement. We must receive the information at least three months prior to the event.

MAY 1 & 2, 11th Antique Bottle Show and Sale sponsored by the San Diego Antique Bottle Club, Scottish Rite Memorial Center, Interstate 8, Mission Valley, California. Information: Ed McCann, 714-295-6028.

MAY 1 & 2, 18th Annual Gems and Mineral Show sponsored by the Kern County Mineral Society, Kern County Fairgrounds, South "P" St. and Ming Avenue, Bakersfield, Calif. Free parking and admission. Dealers, door prizes.

MAY 1 & 2, Canyon City Lapidary Society, El Monte Gem & Mineral Club, Inc., La Puente Gem & Mineral Club—"Million \$ Gem Show." Los Angeles County Fairgrounds.

MAY 1 & 2, Tourmaline Gem and Mineral Society presents "Our Mineral Heritage" at its 27th annual show. Helix High School, La Mesa, Calif. No dealers. Free admission.

MAY 1 & 2, Golden State Treasure Hounds Fourth Annual Hunt, Shell Park, Bakersfield, Calif. Free camping, displays, family fun.

corted the old shift back out. This meant two round trips for him because, in those days of more work and less pay, no one had heard of portal-to-portal time and the shifts overlapped at the hoist room.

That old cat worked both shifts, never ventured outside, and got along just famously for long distances up and down the mine drifts by walking with that stub front leg of his propped up on the haulage rail, so help me. His walk was askew, but his tail was always straight!

JOHN SOUTHWORTH,
Burbank, California.

Enjoys Desert . . .

I enjoy your magazine very much, and have been to many of the places described. All of the articles are so complete and they sure bring back memories of years gone by.

I have spent quite a lot of my 71 years in the tall timber of Washington and Oregon, and in the mountains of California and Nevada. Also some time in Arizona. I really enjoyed the article on Oatman, Arizona as I have been there several times.

Keep up the good work.

RAY F. FORBES,
Brisbane, California.

MAY 8 & 9, The Delvers Annual Gem Show will be held in the Student Center at Cerritos College, 11110 Alondra Blvd., Norwalk, Calif. Free admission, dealers, demonstrations, plenty of parking. Contact: Carole Gibson, 12303 Richeon Ave., Downey, Calif. 90242.

MAY 8-23, The Julian's Woman's Club presents its Golden Anniversary 50th Annual Wildflower Show, Community Hall, Julian, Calif. Over 300 varieties of wildflowers from the desert to the high mountains will be displayed. The Chamber of Commerce will sponsor an Art Show on the upper floor of the Town Hall the same days.

MAY 15 & 16, Annual May Festival of Gems sponsored by the Glendale Lapidary and Gem Society, Glendale Civic Auditorium, 1401 N. Verdugo Rd. Lapidary art, jewelry, minerals and fossils will be displayed. Admission 50 cents, parking free.

MAY 15 & 16, Mission Peak Gem & Mineral Society 10th Annual Show, "Star Spangled Stones" at Irvington High School, Blacow Rd. at Grimmer Blvd., Fremont, Calif. Exhibits, demonstrations, dealers. Chairman: Jim Halter, 5736 Souza Ave., Newark, CA 94560.

MAY 26-31, Annual Chest of Jewels Show, Butte County Fairgrounds, Chico, Calif., sponsored by the Superior California Gem and Mineral Association and its seven member clubs from Paradise, Oroville, Chico, Corning, Red Bluff, Marysville and Redding. Dealers.

MAY 27, Annual Reno-Sparks Flower Show "200 Years of Living Glory," Centennial Coliseum, Reno, Nevada. Admission free, exhibits.

MAY 29-31, American Indian Crafts and Art Show & Sale, Goodman's Hall, 10 Jack London Square, Oakland, California. Admission, Adults \$2.00, Children \$1.00.

MAY 29-31, 12th Annual Gold Country Classic for 4WD and dune buggies, presented by the Sacramento Jeepers, Inc., 9 miles east of Sloughhouse, California on Highway 16, 20 minutes from Sacramento. Geared for the family off-roader. Camping area available.

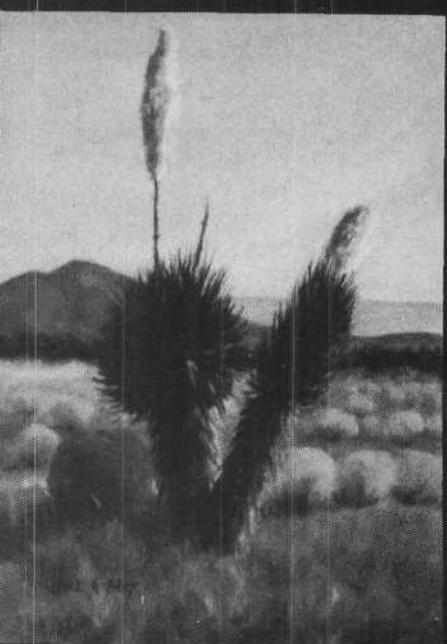
MAY 29-31, World-of-Rockhounds Assoc., Inc., Field Trip to the East Cady Mountains for new and experienced rockhounds. Guided trips from camp each day to collecting area. Instruction for beginners. Camp will be 7.6 miles north of Ludlow via Crucero Rd. Ludlow is approx. 57 miles east of Barstow, Calif. on Highway 40. Chairman: Barbara Kahre, 4516 W 64th St., Inglewood, Calif. 90302.



It's Home, Watercolor, 24" x 16" Lyle V. Ball



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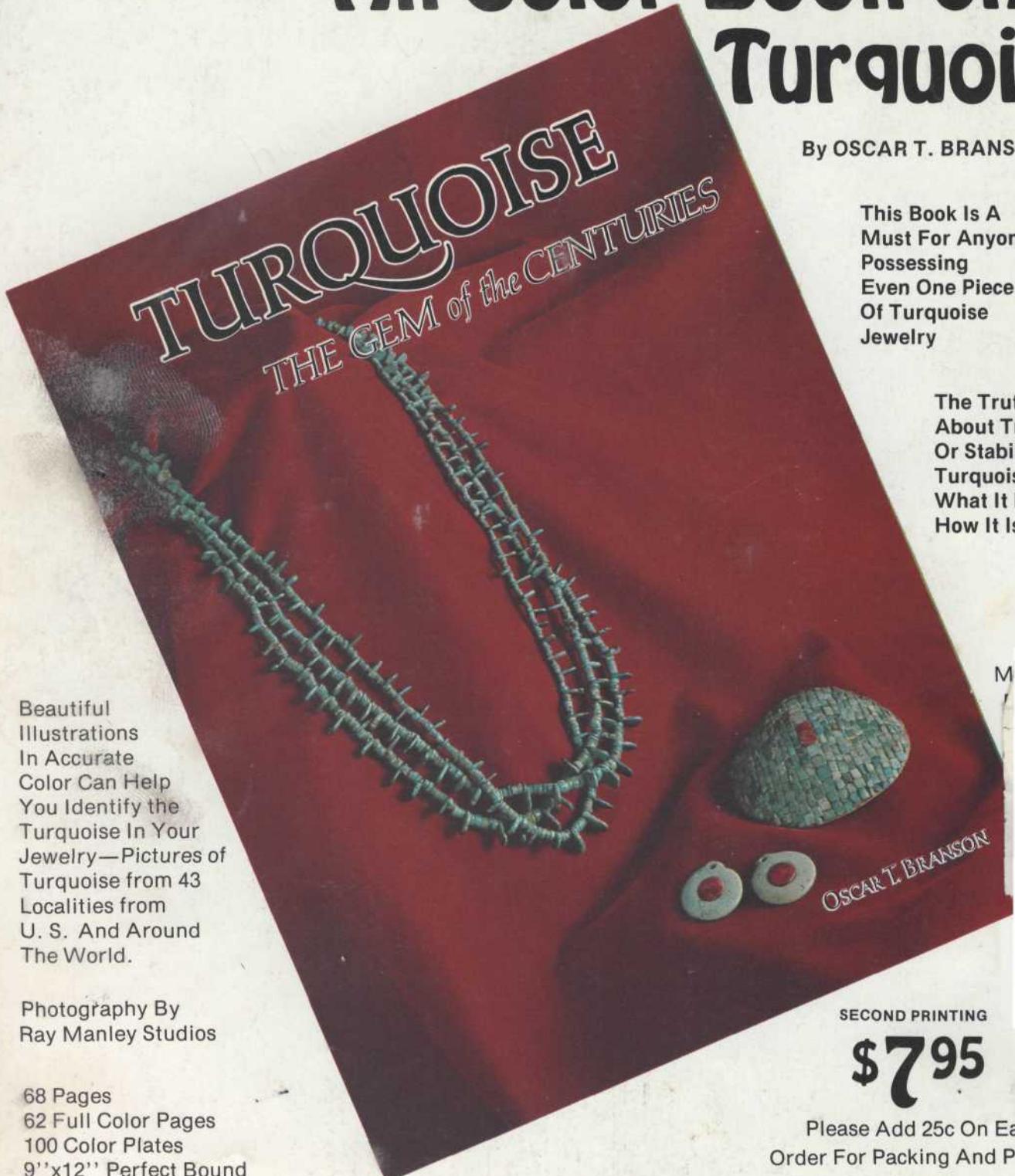
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